

HINTS & SOLUTIONS

CHAPTER 1 : NUMBERS

Warm Up

1. a. 2,525 km = Two thousand five hundred twenty-five kilometres
 b. 4,112 km = Four thousand one hundred twelve kilometres
 c. 9,150 m = Nine thousand one hundred fifty metres
 d. 2,444 m = Two thousand four hundred forty-four metres
 e. 1,507 m = One thousand five hundred seven metres
 f. 8,586 m = Eight thousand five hundred eighty-six metres
2. a. The place value of 2 in 3,256 is 200.
 $(\because 2 \times 100 = 200)$
 b. The place value of 5 in 1,507 is 500.
 $(\because 5 \times 100 = 500)$
 c. 1,000 more than 8,586 is 9,586.
 $(\because 8586 + 1000 = 9586)$
 d. The greatest number among 2,444; 4,112 and 1,507 is 4,112.
 $(\because \text{Comparing thousands place digits, we get: } 4 > 2 > 1)$
 e. $9,150 = \underline{9}$ thousands + $\underline{1}$ hundred + $\underline{5}$ tens + $\underline{0}$ ones.
 $(\because 9150 = 9000 + 100 + 50 + 0)$
3. Total number of seats = 2,763
 Number of vacant seats = 1
 Occupied seats = Total seats – Vacant seats
 $= 2,763 - 1 = 2,762$

Exercise 1A

1. a. Fifty-six thousand four hundred thirteen = 56,413
 b. Eighty-three thousand ninety-two = 83,092
 c. Sixty-six thousand three hundred fifty-two = 66,352
 d. Ninety thousand three = 90,003

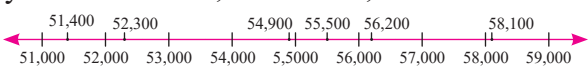
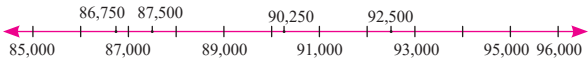
2. a. 53649
 Marking commas: 53,649
 In words: Fifty-three thousand six hundred forty-nine
 b. 14683
 Marking commas: 14,683
 In words: Fourteen thousand six hundred eighty-three
 c. 20403
 Marking commas: 20,403
 In words: Twenty thousand four hundred three
 d. 53967
 Marking commas: 53,967
 In words: Fifty-three thousand nine hundred sixty-seven
3. a. 4 ten thousands, 2 thousands, 8 hundreds, 6 tens and 4 ones = 42,864
 b. 9 ten thousands, 6 hundreds, 4 tens and 9 ones = 90,649
4. a. Numbers between 56,201 and 56,219:
 56,202; 56,203; 56,204; 56,205; 56,206; 56,207; 56,208; 56,209; 56,210; 56,211; 56,212; 56,213; 56,214; 56,215; 56,216; 56,217; 56,218
 b. Numbers between 44,444 and 44,460:
 44,445; 44,446; 44,447; 44,448; 44,449; 44,450; 44,451; 44,452; 44,453; 44,454; 44,455; 44,456; 44,457; 44,458; 44,459
 c. Numbers between 29,056 and 29,065:
 29,057; 29,058; 29,059; 29,060; 29,061; 29,062; 29,063; 29,064
 d. Numbers between 53,495 and 53,510:
 53,496; 53,497; 53,498; 53,499; 53,500; 53,501; 53,502; 53,503; 53,504; 53,505; 53,506; 53,507; 53,508; 53,509

5.	Number	Place value	Face value
a.	53, <u>6</u> 04	$6 \times 100 = 600$	6
b.	<u>4</u> 3,183	$4 \times 10,000 = 40,000$	4
c.	90, <u>3</u> 67	$6 \times 10 = 60$	6
d.	<u>5</u> 7,341	$7 \times 1000 = 7000$	7
e.	20, <u>0</u> 81	0	0



6. a. We can express 24,639 in the expanded form as
 $24,639 = 2 \times 10,000 + 4 \times 1000 + 6 \times 100 + 3 \times 10 + 9 \times 1$
 $= 20,000 + 4,000 + 600 + 30 + 9$
- b. We can express 70,045 in the expanded form as
 $70,045 = 7 \times 10,000 + 0 \times 1000 + 0 \times 100 + 4 \times 10 + 5 \times 1$
 $= 70,000 + 40 + 5$
- c. We can express 82,963 in the expanded form as
 $82,963 = 8 \times 10,000 + 2 \times 1000 + 9 \times 100 + 6 \times 10 + 3 \times 1$
 $= 80,000 + 2,000 + 900 + 60 + 3$
- d. We can express 90,999 in the expanded form as
 $90,999 = 9 \times 10,000 + 0 \times 1000 + 9 \times 100 + 9 \times 10 + 9 \times 1$
 $= 90,000 + 900 + 90 + 9$
7. a. Place values of 6s in 64,365:
 $6 \times 10,000 = 60,000$
 $6 \times 10 = 60$
 Required sum = $60,000 + 60 = 60,060$
 Required difference = $60,000 - 60 = 59,940$
- b. Place values of 6s in 62,068:
 $6 \times 10,000 = 60,000$
 $6 \times 10 = 60$
 Required sum = $60,000 + 60 = 60,060$
 Required difference = $60,000 - 60 = 59,940$
- c. Place values of 6s in 36,261:
 $6 \times 1000 = 6000$
 $6 \times 10 = 60$
 Required sum = $6000 + 60 = 6060$
 Required difference = $6000 - 60 = 5940$
- d. Place values of 6s in 63,586:
 $6 \times 10,000 = 60,000$
 $6 \times 1 = 6$
 Required sum = $60,000 + 6 = 60,006$
 Required difference = $60,000 - 6 = 59,994$
8. a. The hundreds place is just to the right of the thousands place.
- b. There are 3 place value positions between the ten thousands and the ones places, namely, thousands, hundreds, and tens.
- c. Since $45,000 \div 1000 = 45$, there are 45 thousands in 45,690.
- d. Since $36,430 \div 10 = 3,643$, there are 3643 tens in 36,436.

Exercise 1B

1. Numbers to be circled are 20,555 and 20,529, since they lie between 20,525 and 20,575.
2. a. 
 b. 
3. a. Count by tens
 ii. 36,496: 36,506; 36,516; 36,526; 36,536; 36,546
 iii. 73,640: 73,650; 73,660; 73,670; 73,680; 73,690
- b. Count by hundreds.
 ii. 54,361: 54,461; 54,561; 54,661; 54,761; 54,861
 iii. 73,178: 73,278; 73,378; 73,478; 73,578; 73,678
- c. Count by thousands.
 ii. 7,248: 8,248; 9,248; 10,248; 11,248; 12,248
 iii. 60,436: 61,436; 62,436; 63,436; 64,436; 65,436
4. a. Successor of 34,364 = $34,364 + 1 = 34,365$
 b. Successor of 73,648 = $73,648 + 1 = 73,649$
 c. Successor of 11,143 = $11,143 + 1 = 11,144$
 d. Successor of 40,068 = $40,068 + 1 = 40,069$
 e. Successor of 54,836 = $54,836 + 1 = 54,837$
 f. Successor of 19,999 = $19,999 + 1 = 20,000$
5. a. Predecessor of 12,730 = $12,730 - 1 = 12,729$
 b. Predecessor of 5,430 = $5,430 - 1 = 5,429$
 c. Predecessor of 91,348 = $91,348 - 1 = 91,347$
 d. Predecessor of 43,649 = $43,649 - 1 = 43,648$
 e. Predecessor of 73,645 = $73,645 - 1 = 73,644$
 f. Predecessor of 56,304 = $56,304 - 1 = 56,303$

Exercise 1C

1. To compare two numbers:
- First, compare the number of digits.
 - If the numbers have the same number of digits, compare the digits from left to right.
 - Stop when you find different digits; the number with the greater digit is larger.
- a. 7,696 and 98,769: 98,769 has 5 digits, while 7,696 has 4 digits. So, $98,769 > 7,696$.
- b. 95,492 and 68,678: Both are 5-digit numbers. Compare the first digit: $9 > 6$, so $95,492 > 68,678$.



- c 58,956 and 69,560: Both are 5-digit numbers.
Compare the first digit: $5 < 6$,
so $58,956 < 69,560$.
- d 69,422 and 9,422: 69,422 has 5 digits, while 9,422 has 4 digits. So, $69,422 > 9,422$.
- e 8,201 and 89,990: 8,201 is a 4-digit number, while 89,990 is a 5-digit number.
So, $8,201 < 89,990$.
- f 99,989 and 99,999: The first three digits are the same. Compare the tens place: $8 < 9$, so $99,989 < 99,999$.

2. To find the greatest and the smallest numbers:

- First, compare the number of digits.
- If the numbers have the same number of digits, compare digits from left to right.
- The number with the greater digit is the greater, and the one with the smaller digit is the smaller.

a. 8,957; 7,876; 7,856; 8,857

All are 4-digit numbers. Compare the first digit of each:

$8 > 7$, so the greatest number is among 8,957 and 8,857.

Compare next digits: $9 > 8$, so 8,957 is greatest.

Among the smaller ones: Compare the tens place: $7 > 5$, so 7,876 is larger than 7,856.

Greatest = 8,957 Smallest = 7,856

b. 88,232; 88,332; 5,657; 8,656

88,232 and 88,332 are 5-digit numbers, others are 4-digit numbers.

So, greatest is among 88,232 and 88,332.

Compare digits: In the hundreds place, $3 > 2$, so 88,332 is greatest.

Among 4-digit numbers: In the thousands place, $5 < 8$, so $5,657 < 8,656$.

Greatest = 88,332 Smallest = 5,657

c. 45,261; 45,562; 45,172; 45,304

All are 5-digit numbers. Compare first digits (same), then next digits.

Compare thousands: $5 = 5$, so check hundreds: $1 < 2 < 3 < 5$

So, 45,172 is smallest and 45,562 is greatest.

Greatest = 45,562 Smallest = 45,172

d. 78,910; 78,960; 68,960; 78,958

68,960 has smaller first digit (6), so it is the smallest.

Among others, compare 78,910; 78,960; 78,958
First three digits are the same, compare the tens digits: $6 > 5 > 1$

So, 78,960 is the greatest.

Greatest = 78,960 Smallest = 68,960

3. a. First, we arrange the given numbers in the place value chart and then start comparing.

	Th	H	T	O	
	8	8	7	6	→ iv
Same digit →	8	8	5	6	→ iii
	8	8	5	0	→ ii
	6	5	6	0	→ i

6,560 is the smallest number, and 8,876 is the greatest number.

Also, $8,850 < 8,856$, as $6 > 0$.

So, ascending order of number are: $6,560 < 8,850 < 8,856 < 8,876$.

b. Same as part (a): $65,690 < 67,656 < 67,895 < 98,975$

c. Same as part (a): $56,561 < 56,563 < 56,565 < 56,567$

d. Same as part (a): $56,565 < 67,654 < 76,546 < 76,946$

4. a. First, we arrange the given numbers in the place value chart and then start comparing.

	Th	H	T	O	
	8	9	8	7	→ i
	8	9	7	8	→ ii
	8	9	6	8	→ iii
	8	9	6	0	→ iv
↑ ↑					
Same Same					

8,987 is the greatest number and 8,960 is the smallest number.

Also, 8,978 is greater than 8,968.

So, $8,987 > 8,978 > 8,968 > 8,960$.

b. Same as part (a): $3,560 > 3,206 > 3,105 > 3,103$

c. Same as part (a): $79,568 > 79,567 > 59,678 > 59,576$

d. Same as part (a): $99,999 > 96,999 > 89,999 > 83,456$



5. Since $2,440 < 6,371 < 25,362 < 58,232 < 69,911$,
The planets in increasing order of their sizes:
Mercury < Earth < Uranus < Saturn < Jupiter.

Exercise 1D

1. a. Digits: 2, 3, 0, 4

To form the greatest number, arrange the given from left to right digits in descending order.

$\therefore$ Greatest number formed = 4320

Since one of the digit is 0, to form the smallest number, choose the smallest non-zero digit (2), then arrange the remaining digits in ascending order.

$\therefore$ Smallest number = 2034

- b. Digits = 3, 9, 6, 7

To form the greatest number, arrange the given digits in descending order.

$\therefore$ Greatest number = 9763

To form the smallest number, arrange the given digits in ascending order.

$\therefore$ Smallest number = 3679

- c. Digits = 4, 8, 0, 5, 3

Same as part a:

$\therefore$ Greatest number = 85,430

$\therefore$ Smallest number = 30,548

- d. Digits = 6, 9, 3, 2, 1

Same as part b:

$\therefore$ Greatest number = 96,321

$\therefore$ Smallest number = 12,369

2.

	Digits	Greatest number	Smallest number
a.	2, 7, 3, 5	7532	2357
b.	7, 5, 4, 8	8754	4578
c.	9, 8, 3, 0	9830	3089
d.	0, 1, 9, 6	9610	1069

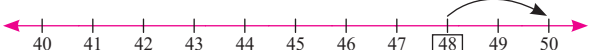
3. To form greatest 5-digit number using the given digits when repetition of digits is allowed, repeat the largest given digit as many times as needed to complete the five digits and arrange the remaining given digits in descending order.

Similarly to form smallest 5-digit number using the given digits when repetition of digits is

allowed, repeat smallest given digit as many times as needed to complete the five digits and arrange the remaining digits in descending order. Therefore,

	Digits	Greatest number	Smallest number
a.	5, 8, 3, 4	88543	33458
b.	6, 0, 7	77760	60007
c.	2, 7, 8	88872	22278
d.	9, 6, 0	99960	60009
e.	5, 0	55550	50000

Exercise 1E

1. a. 

48 lies between 40 and 50, but it is closer to 50.
So, 48 rounds to 50.

- b. 

209 lies between 200 and 210, but it is closer to 210.

So, 209 rounds to 210.

- c. Same as part (b): 740
d. Same as part (b): 560
e. Same as part (b): 1,080
f. Same as part (b): 2,370
g. Same as part (b): 5,750
h. Same as part (b): 9,050
i. Same as part (b): 10,200
j. Same as part (b): 14,560

2. a. 

345 lies between 300 and 400, but it is closer to 300.

So, 345 rounds to 300.

- b. Same as part (a): 600
c. Same as part (a): 2,800
d. Same as part (a): 4,600
e. Same as part (a): 5,000
f. Same as part (a): 2,500
g. Same as part (a): 9,400
h. Same as part (a): 7,500
i. Same as part (a): 14,700
j. Same as part (a): 43,600



3. Same as question 1 and 2:

	Numbers	Nearest 10	Nearest 100
a.	346	350	300
b.	567	570	600
c.	238	240	200
d.	1,356	1,360	1,400
e.	2,406	2,410	2,400

4. a. The height of Mount Everest is 8,848 m.
Rounding off to the nearest 10: 8,848 lies between 8,840 and 8,850, but it is closer to 8,850.
So, 8,848 m rounds to 8,850 m.
Rounding off to the nearest 100: 8,848 lies between 8,800 and 8,900, but it is closer to 8,800.
So, 8,848 m rounds to 8,800 m.
- b. The length of the river Ganges is 2,525 km.
Rounding off to the nearest 10: 2,525 lies exactly between 2,520 and 2,530.
So, 2,525 km rounds to 2,530 km.
Rounding off to the nearest 100: 2,525 lies between 2,500 and 2,600, but it is closer to 2,500.
So, 2,525 km rounds to 2,500 km.
- c. The diameter of the Earth is 12,742 km.
Rounding off to the nearest 10: 12,742 lies between 12,740 and 12,750, but it is closer to 12,740.
So, 12,742 km rounds to 12,740 km.
Rounding off to the nearest 100: 12,742 lies between 12,700 and 12,800, but it is closer to 12,700.
So, 12,742 km rounds to 12,700 km.
- d. The International Space Station is at an altitude of 425 km.
Rounding off to the nearest 10: 425 lies exactly between 420 and 430.
So, 425 km rounds to 430 km.
Rounding off to the nearest 100: 425 lies between 400 and 500, but it is closer to 400.
So, 425 km rounds to 400 km.

Learning Logs

1. a. On comparing all the given heights, we get 28,169 ft. as the greatest height, Kanchenjunga is the highest mountain.
- b. Ascending order means arranging numbers from smallest to largest. Compare the digits starting from left (ten-thousands place), then move to smaller places, if needed. We get 28,169 ft. as the greatest height and 22,940 ft. as the smallest height.
Also, 25,446 ft. is smaller than 25,643 ft., 24,370 ft. is smaller than 25,446 ft., and 23,760 ft. is smaller than 24,370 ft.
So, 22,940 ft. < 23,760 ft. < 24,370 ft. < 25,446 ft. < 25,643 ft. < 28,169 ft.
- d. To roundoff a number to the nearest 100, we check its 10s digit. If the tens digit is 5 or more, we round up and if less than 5, we round down.

Mountians	Rishi Pahar	Nanda Devi	Kanchenjunga	K12	Mukut Parbat	Kamet
Height (in ft)	22,940	25,643	28,169	24,370	23,760	25,446
Height rounded to nearest 100	22,900	25,600	28,200	24,400	23,800	25,400

2. a. 23,456
Place Value of 5 in 23,456 = $5 \times 10 = 50$
Face Value of 5 in 23,456 = 5
- b. 6,36,483
Place Value of 6 in 6,36,483 = $6 \times 1000 = 6000$
Face Value of 6 in 6,36,483 = 6
- c. 57,364
Place Value of 5 in 57,364 = $5 \times 10,000 = 50,000$
Face Value of 5 in 57,364 = 5
- d. 10,486
Place Value of 4 in 10,486 = $4 \times 100 = 400$
Face Value of 4 in 10,486 = 4
3. a. $26,436 < 26,456$ (Comparing till tens digits, we get $3 < 5$)
- b. $83,648 > 43,648$ (Comparing the ten thousands digits, we get $8 > 4$)
- c. $29,911 > 29,191$ (Comparing till hundreds digits, we get $9 > 1$)
- d. $49,150 < 90,150$ (Comparing the ten thousands digits, we get $4 < 9$)



4. a. 14,586
 Successor of 14,586 = $14,586 + 1 = 14,587$
 Predecessor of 14,586 = $14,586 - 1 = 14,585$
- b. 32,008
 Successor of 32,008 = $32,008 + 1 = 32,009$
 Predecessor of 32,008 = $32,008 - 1 = 32,007$
- c. 39,009
 Successor of 39,009 = $39,009 + 1 = 39,010$
 Predecessor of 39,009 = $39,009 - 1 = 39,008$
- d. 69,897
 Successor of 69,897 = $69,897 + 1 = 69,898$
 Predecessor of 69,897 = $69,897 - 1 = 69,896$
5. a. On comparing, 82,500 is the greatest number, and 28,500 is the smallest number.
 Also, 39,542 is smaller than 52,800; 52,800 is smaller than 58,002; 58,002 is smaller than 67,019.
 So, $28,500 < 39,542 < 52,800 < 58,002 < 67,019 < 82,500$.
- b. On comparing, 98,677 is the greatest number, and 3,705 is the smallest number.
 Also, 87,696 is greater than 78,765; 78,765 is greater than 37,852; and 37,852 is greater than 9,998.
 So, $98,677 > 87,696 > 78,765 > 37,852 > 9,998 > 3,705$.
6. To form the greatest number, arrange the given digits in ascending order from right to left.
- a. 3, 4 and 8: 843 b. 7, 0 and 8: 870
 c. 1, 3 and 9: 931
7. Since there are only four digits, the greatest digit is repeated twice.
 So, the greatest 5-digit number using the digits 8, 4, 7 and 3 is 88,743.

8.		Smallest Number	Greatest Number
a.	1, 2 and 3	1123	3321
b.	2, 9 and 5	2259	9952
c.	3, 1 and 0	1003	3310

Mental Maths

1. 70 tens = $70 \times 10 = 700$
 Therefore, 70 tens = 7 hundreds.
 Thus, c. is the correct option.

2. Ten thousand is written as 10,000.
 Hence, it is a five-digit number.
 Thus, b. is the correct option.
3. The number 85,420 has 5 in the thousands place.
 Thus, a. is the correct option.
4. The number 29,094 has 0 in the hundreds place, which is the least among all the options.
 Thus, d. is the correct option.
5. The successor of 9999 = $9999 + 1 = 10,000$.
 Thus, a. is the correct option.
6. Among the given options, only the number 2,341 lies between 1,234 and 4,321.
 Thus, b. is the correct option.

HOTS

In the given pattern, numbers are made using matchsticks.

Here,  has 6 joints,  has 5 joints,  has 4 joints,  has 3 joints,  has 2 joints.

According to the given pattern, the next number formed should have 1 joint.

Therefore, the next number is .

CHAPTER 2 : ADDITION AND SUBTRACTION

Warm Up

1. a. 1548 visitors visited the Fiction section. $528 + 1020 = 1548$
- b. 2085 visitors visited the Language section. $840 + 1245 = 2085$
- c. 2250 visitors visited the Children's Books section. $710 + 1540 = 2250$
- d. 1696 visitors visited the Non-fiction section. $712 + 984 = 1696$



- e. 2053 visitors visited the Stationery section.
- $$\begin{array}{r} 425 \\ + 1628 \\ \hline 2053 \end{array}$$
2. a. The difference in the number of visitors is 492.
- $$\begin{array}{r} 1020 \\ - 528 \\ \hline 492 \end{array}$$
- b. The difference in the number of visitors is 405.
- $$\begin{array}{r} 1245 \\ - 840 \\ \hline 405 \end{array}$$
- c. The difference in the number of visitors is 830.
- $$\begin{array}{r} 1540 \\ - 710 \\ \hline 830 \end{array}$$
- d. The difference in the number of visitors is 272.
- $$\begin{array}{r} 984 \\ - 712 \\ \hline 272 \end{array}$$
- e. The difference in the number of visitors is 1203.
- $$\begin{array}{r} 1628 \\ - 425 \\ \hline 1203 \end{array}$$

Exercise 2A

1. a. $1 + 499 = 500$ b. $999 + 1 = 1000$
 c. $2436 + 0 = 2436$ d. $0 + 5364 = 5364$
 e. $1796 + 0 = 1796$ f. $9999 + 1 = 10000$
 g. $345 + 246 = 246 + 345$
 h. $4021 + 2736 = 2736 + 4021$

2. a.

	Th	H	T	O
	3	1	2	0
+	2	3	0	3
	3	0	4	2
	8	4	6	5

b.

	TTh	Th	H	T	O
		3	7	2	1
+	5	1	1	2	0
	5	6	8	8	4

c.

	TTh	Th	H	T	O
	2	3	4	4	0
	3	2	1	2	4
+	1	1	3	3	3
	6	6	8	9	7

3. a. Arrange the digits of the given numbers in the place value columns and add the numbers starting from the ones place.

Step 1: Add the ones.

$$0 \text{ ones} + 5 \text{ ones} = 5 \text{ ones}$$

Write 5 in the ones column.

Step 2: Add the tens.

$$3 \text{ tens} + 2 \text{ tens} = 5 \text{ tens}$$

Write 5 in the tens column.

Step 3: Add the hundreds.

$$1 \text{ hundred} + 2 \text{ hundreds} = 3 \text{ hundreds}$$

Write 3 in the hundreds column.

Step 4: Add the thousands.

$$2 \text{ thousands} + 4 \text{ thousands} = 6 \text{ thousands}$$

Write 6 in the thousands column.

$$\text{Thus, } 2130 + 4225 = 6355$$

b. Same as part a:

	TTh	Th	H	T	O
	3	2	0	3	2
+	1	0	1	1	4
	4	2	1	4	6

c. Same as part a:

	TTh	Th	H	T	O
	4	5	3	2	1
+	2	1	0	2	0
	7	9	6	8	6

4. a.

	Th	H	T	O
	①		①	
	1	9	6	3
+	2	4	0	7
	4	3	7	0

b.

	Th	H	T	O
	①	①	①	
	4	5	7	9
+	3	8	9	6
	8	4	7	5

c.

	TTh	Th	H	T	O
		①	①	①	
		2	6	8	4
+		7	8	9	8
	1	0	5	8	2

d.

	TTh	Th	H	T	O
		①	①	①	
		4	5	6	9
+		9	9	9	9
	1	4	5	6	8

e.

	TTh	Th	H	T	O
	①		①	①	
	1	3	2	4	5
+	3	9	1	8	5
	5	2	4	3	0

f.

	TTh	Th	H	T	O
	①	①	①	①	
	2	9	9	8	5
+	3	7	5	3	8
	6	7	5	2	3

g.

	TTh	Th	H	T	O
		①	①		
		4	2	3	6
		5	6	4	3
+		6	2	7	0
	1	6	1	4	9

h.

	TTh	Th	H	T	O
		②	①	①	
		4	2	5	7
		3	0	8	3
+		1	3	9	6
	8	7	3	7	3

i.

	TTh	Th	H	T	O
	①	①	②	①	
	6	4	8	9	6
	1	3	3	7	6
+	1	2	4	8	5
	9	0	7	5	7



5. a.

	T	Th	H	T	O
			①	①	
		3	2	4	5
+		7	5	6	7
	1	0	8	1	2

Adding down

Sum

	T	Th	H	T	O
	1	0	8	1	2
+		7	5	6	7
		3	2	4	5

Sum

Adding up

We get the same sum in both the case. So, the sum is correct.

b.

	T	Th	H	T	O
			①	①	
		7	3	9	5
+		6	4	2	6
	1	3	8	2	1

Check the answer same as part a.

c.

	T	Th	H	T	O
	①	①	①	①	
	4	5	6	5	6
+	1	6	3	7	8
	6	2	0	3	4

Check the answer same as part a.

d.

	T	Th	H	T	O
	①	①	①	①	
		9	9	9	9
+	8	8	8	8	8
	9	8	8	8	7

Check the answer same as part a.

Exercise 2B

1. Look at the ones digit; if it is 5 or more then round up, and if it is less than 5, round down. Add the rounded numbers to get the estimated sum and the original numbers to get the actual sum.

a.

	H	T	O
	9	5	
+	3	4	
	1	2	9

Actual Sum

	H	T	O
	1	0	0
+	3	0	
	1	3	0

Estimated Sum

b.

	H	T	O
	①	①	
	2	7	3
+	1	5	8
	4	3	1

Actual Sum

	H	T	O
	①		
	2	7	0
+	1	6	0
	4	3	0

Estimated Sum

c.

	H	T	O
			①
	3	2	5
+	4	2	8
	7	5	3

Actual Sum

	H	T	O
			①
	3	3	0
+	4	3	0
	7	6	0

Estimated Sum

- d. Same as part (c): Actual Sum = 5899, Estimated Sum = 5900
- e. Same as part (c): Actual Sum = 4783, Estimated Sum = 4780
- f. Same as part (c): Actual Sum = 3792, Estimated Sum = 3790
- g. Same as part (c): Actual Sum = 75987, Estimated Sum = 75990
- h. Same as part (c): Actual Sum = 78776, Estimated Sum = 78780

2. Look at the tens digit; if it is 5 or more then round up, and if it is less than 5, round down. Add the rounded numbers to get the estimated sum and the original numbers to get the actual sum.

a.

	Th	H	T	O
			①	
	9	5	6	
+	5	3	8	
	1	4	9	4

Actual Sum

	Th	H	T	O
	1	0	0	0
+	5	0	0	
	1	5	0	0

Estimated Sum

b.

	Th	H	T	O
	①	①		
	2	8	9	
+	7	6	5	
	1	0	5	4

Actual Sum

	Th	H	T	O
				①
	3	0	0	
+	8	0	0	
	1	1	0	0

Estimated Sum

- c. Same as part (b): Actual Sum = 1173, Estimated Sum = 1200
- d. Same as part (b): Actual Sum = 14382, Estimated Sum = 14400
- e. Same as part (b): Actual Sum = 13692, Estimated Sum = 13700
- f. Same as part (b): Actual Sum = 54653, Estimated Sum = 54600
- g. Same as part (b): Actual Sum = 72081, Estimated Sum = 72100
- h. Same as part (b): Actual Sum = 36798, Estimated Sum = 36800



Exercise 2C

	T	Th	H	T	O
1. Visitors in January =		4	9	8	7
Visitors in February =		4	5	6	7
Visitors in March = +		5	7	9	3
Total visitors =	1	5	3	4	7

Therefore, the zoo had 15,347 visitors in these three months.

	T	Th	H	T	O
2. Fans produced in 2013 =	2	9	0	7	7
Fans produced in 2014 =	3	9	8	5	9
Fans produced in 2015 = +	1	8	7	9	3
Total production =	8	7	7	2	9

Therefore, the total production of fans in three years is 87,729.

	T	Th	H	T	O
3. Money withdrawn on the first day = ₹		5	5	0	0
Money withdrawn on the second day = ₹		9	5	0	0
Money withdrawn on the third day = + ₹		7	5	0	0
Total money withdrawn = ₹	2	2	5	0	0

Therefore, Mr. Gaurav withdrew ₹22,500 in all.

	T	Th	H	T	O
4. Number of maths books =		3	8	9	5
Science books =		7	8	7	6
English books = +		9	9	2	5
Total number of books =	2	1	6	9	6

There are 21,696 books in the library.

	T	Th	H	T	O
5. Number of mango trees =		7	7	5	6
Apple trees = +		6	5	4	3
Total number of trees =	1	4	2	9	9

There are 14,299 trees in the orchard.

	T	Th	H	T	O
6. Votes for first candidate =	3	6	9	5	3
Votes for second candidate = +	2	5	2	4	3
Total votes polled =	6	2	1	9	6

The total number of votes polled is 62,196.

7. Cost of printer = ₹2,995
 Cost of computer = ₹15,830
 Cost of scanner = ₹3,750

a. $15830 + 3750 = 19580$

	T	Th	H	T	O
	1	5	8	3	0
+		3	7	5	0
	1	9	5	8	0

Therefore, the total cost of the computer and scanner is ₹19,580.

b. $15830 + 2995 = 18825$

	T	Th	H	T	O
	1	5	8	3	0
+		2	9	9	5
	1	8	8	2	5

Therefore, the total cost of the computer and printer is ₹18,825.

c. $3750 + 2995 = 6745$

	Th	H	T	O
	3	7	5	0
+	2	9	9	5
	6	7	4	5

Therefore, the total cost of the scanner and printer is ₹6,745.

d. $2995 + 15830 + 3750 = 22575$

	T	Th	H	T	O
		2	9	9	5
+	1	5	8	3	0
		3	7	5	0
	2	2	5	7	5

Therefore, the total cost of all three items is ₹22,575.

Exercise 2D

1. a. $48 - 0 = 48$ b. $154 - 0 = 154$
 c. $2364 - 0 = 2364$ d. $73 - 73 = 0$
 e. $193 - 193 = 0$ f. $2434 - 2434 = 0$
 g. $56 - 1 = 55$ h. $173 - 1 = 172$
 i. $3728 - 1 = 3727$

2. a.

7	17	5	15
8	7	6	5
-	3	9	4
	4	8	1

b.

8	13
9	9
9	9
-	7
	2

c.

10	12
6	8
7	1
-	5
	1

d.

9	9
5	10
6	0
-	3
	2



e.

		13		
4	3	13	5	14
5	4	3	6	4
-		9	4	1 8
4	4	9	4	6

f.

		13	12	
5	3	2	18	
6	4	3	8	9
-		9	6	9 8
5	4	6	9	1

3. a.

		12	15	
	2	2	3	13
9	3	3	6	3
-	3	2	9	8 9
6	0	3	7	4

b.

		12	15	14
8	2	3	4	14
9	3	6	5	4
-	6	9	9	9 9
2	3	6	5	5

c.

		15	9	
	7	3	10	10
7	8	6	0	0
-	4	3	9	9 8
3	4	6	0	2

d.

		16	9	12
5	6	10	2	14
6	7	0	3	4
-	4	9	9	7 8
1	7	0	5	6

e.

	9	9	9	
8	10	10	10	10
9	0	0	0	0
-	3	7	6	5 4
5	2	3	4	6

f.

	9	9	9	
5	10	10	10	10
6	0	0	0	0
-	1	4	9	8 9
4	5	0	1	1

4. a.

	11	9		
2	3	10	14	
3	2	0	4	
-	1	6	5	9
1	5	4	5	

	1	1	1	
1	5	4	5	
1	6	5	9	
+	3	2	0	4

The subtraction is correct.

b.

	14	18		
8	4	8	16	
9	5	9	6	
-	6	5	9	9
2	9	9	7	

	1	1	1	
2	9	9	7	
6	5	9	9	
+	9	5	9	6

The subtraction is correct.

c.

	12	15	13	
6	2	3	3	18
7	3	6	4	8
-	8	7	6	9
6	4	8	7	9

	1	1	1	1
6	4	8	7	9
7	3	6	4	8
+	7	3	6	4 8

The subtraction is correct.

- d. Same as part (c): 23570
 e. Same as part (c): 6238
 f. Same as part (c): 36775
 g. Same as part (c): 45037
 h. Same as part (c): 32302

Exercise 2E

1. a.

7	6
-	2 5
5	1

← Actual difference

8	0
-	3 0
5	0

← Estimated difference

b.

3	13
4	3 6
-	2 5 5
1	8 1

← Actual difference

3	14
4	4 0
-	2 6 0
1	8 0

← Estimated difference

c.

10		
6	0	15
7	1	8
-	2	1 9
4	9	6

← Actual difference

7	2	0
-	2	2 0
5	0	0

← Estimated difference

- d. Same as part (c): Actual Difference = 222,
 Estimated Difference = 230
 e. Same as part (c): Actual Difference = 772,
 Estimated Difference = 770
 f. Same as part (c): Actual Difference = 4325,
 Estimated Difference = 4320
 g. Same as part (c): Actual Difference = 1010,
 Estimated Difference = 1010
 h. Same as part (c): Actual Difference = 6666,
 Estimated Difference = 6670

2. a.

3	2	16
4	3	6
-	2	5 8
1	7	8

← Actual difference

4	0	0
-	3	0 0
1	0	0

← Estimated difference

b.

6	13
7	3 6
-	1 9 2
5	4 4

← Actual difference

7	0	0
-	2	0 0
5	0	0

← Estimated difference

c.

6	12
5	7 2
-	3 0 8
2	6 4

← Actual difference

6	0	0
-	3	0 0
3	0	0

← Estimated difference

- d. Same as part (c): Actual Difference = 469,
 Estimated Difference = 400
 e. Same as part (c): Actual Difference = 1246,
 Estimated Difference = 1200
 f. Same as part (c): Actual Difference = 3568,
 Estimated Difference = 3500



- g. Same as part (c): Actual Difference = 15878,
Estimated Difference = 15900
- h. Same as part (c): Actual Difference = 3228,
Estimated Difference = 3300

Exercise 2F

1.

	T	Th	H	T	O
Number of TV sets produced in 2023	2	0	3	0	8
Number of TV sets produced in 2022	1	3	4	5	2
Increase in production of TV sets	0	6	8	5	6

Thus, increase in the production of TV set = 6856.

2.

	T	Th	H	T	O
Milk produced in a day	8	7	0	0	0
Milk supplied in depot	2	5	0	2	
Milk left with dairy	8	4	4	9	8

Thus, 84498 litres milk left with dairy.

3.

	T	Th	H	T	O
Number of bags of rice in the godown	2	5	6	1	5
Number of bags sold	7	6	4	5	
Number of bags left in the godown	1	7	9	7	0

Thus, 17970 bags left in the godown.

4.

	T	Th	H	T	O
Cost of second hand car	₹ 9	5	7	0	0
Amount of money Rohan has	₹ 6	3	3	0	0
More money required	₹ 3	2	4	0	0

Thus, Rohan needs ₹32400 more to purchase the car.

5.

	T	Th	H	T	O
Total number of trees in the orchard	5	7	5	3	
Number of trees fell over	2	7	3	0	
Number of trees left in the orchard	3	0	2	3	

Thus, 3023 trees were left in the orchard.

6. a.

	T	Th	H	T	O
Price of apples	₹ 1	5	3	3	
Price of grapes	₹ 2	3	3	3	
Difference	₹ 1	3	0	0	

b.

	T	Th	H	T	O
Price of mangoes	₹ 8	9	7		
Price of grapes	₹ 2	3	3		
Difference	₹ 6	6	4		

c.

	T	Th	H	T	O
Price of apples	₹ 1	5	3	3	
Price of mangoes	₹ 8	9	7		
Difference	₹ 6	3	6		

Exercise 2G

1. a.

617	975
+ 358	- 234
975	741

Therefore, $617 + 358 - 234 = 741$.

b.

5243	8891
+ 3648	- 1764
8891	7127

Therefore, $5243 + 3648 - 1764 = 7127$.

c.

2436	9667
+ 7231	- 3645
9667	6022

Therefore, $2436 - 3645 + 7231 = 6022$.

d.

4360	3496
- 864	+ 1355
3496	4851

Therefore, $4360 - 864 + 1355 = 4851$.

e. Same as above: 4457

f. Same as above: 6295

g. Same as above: 1255

h. Same as above: 3340

2. a.

7364	7636
+ 272	
7636	

So, 7636 is 272 more than 7364.

$$\begin{array}{r}
 \textcircled{1} \textcircled{1} \textcircled{1} \\
 2 \ 0 \ 9 \ 7 \ 8 \\
 + \quad \quad 1 \ 5 \ 4 \ 5 \\
 \hline
 2 \ 2 \ 5 \ 2 \ 3
 \end{array}$$

So, 22523 is 1545 more than 20978.

$$\begin{array}{r}
 \textcircled{2} \textcircled{16} \\
 \cancel{3} \ \cancel{6} \ 9 \ 5 \\
 - \quad \quad 7 \ 8 \ 4 \\
 \hline
 2 \ 9 \ 1 \ 1
 \end{array}$$

So, 2911 is 784 less than 3695.

$$\begin{array}{r}
 \textcircled{4} \textcircled{10} \\
 9 \ 3 \ 6 \ \cancel{5} \ \cancel{0} \\
 - \quad \quad 2 \ 5 \ 4 \ 3 \\
 \hline
 9 \ 1 \ 1 \ 0 \ 7
 \end{array}$$

So, 91107 is 2543 less than 93650.

$$\begin{array}{r}
 \textcircled{9} \textcircled{9} \\
 \textcircled{4} \textcircled{10} \textcircled{10} \textcircled{10} \\
 \cancel{5} \ \cancel{0} \ \cancel{0} \ \cancel{0} \\
 - \quad \quad 2 \ 7 \ 8 \ 5 \\
 \hline
 2 \ 2 \ 1 \ 5
 \end{array}$$

So, 2215 should be added to 2785 to get 5000.

$$\begin{array}{r}
 \textcircled{4} \textcircled{16} \textcircled{3} \textcircled{10} \\
 \cancel{5} \ \cancel{6} \ \cancel{4} \ \cancel{0} \\
 - \quad \quad 7 \ 3 \ 6 \\
 \hline
 4 \ 9 \ 0 \ 4
 \end{array}$$

So, 4904 should be added to 736 to get 5640.

$$\begin{array}{r}
 \textcircled{6} \textcircled{13} \textcircled{5} \textcircled{14} \\
 9 \ 7 \ \cancel{3} \ \cancel{6} \ \cancel{4} \\
 - \quad \quad 4 \ 5 \ 3 \ 7 \\
 \hline
 9 \ 2 \ 8 \ 2 \ 7
 \end{array}$$

So, 92827 should be added to 4537 to get 97364.

$$\begin{array}{r}
 \textcircled{0} \textcircled{9} \textcircled{9} \textcircled{9} \\
 \textcircled{10} \textcircled{10} \textcircled{10} \textcircled{10} \\
 \cancel{1} \ \cancel{0} \ \cancel{0} \ \cancel{0} \ \cancel{0} \\
 - \quad \quad 5 \ 3 \ 4 \ 6 \\
 \hline
 4 \ 6 \ 5 \ 4
 \end{array}$$

So, 4654 should be added to 5346 to get 10000.

$$\begin{array}{r}
 \textcircled{2} \textcircled{16} \textcircled{3} \textcircled{13} \\
 9 \ \cancel{3} \ \cancel{6} \ \cancel{4} \ \cancel{3} \\
 - \quad \quad 2 \ 7 \ 1 \ 4 \\
 \hline
 9 \ 0 \ 9 \ 2 \ 9
 \end{array}$$

So, 90929 should be subtracted from 93643 to get 2714.

$$\begin{array}{r}
 \textcircled{9} \textcircled{9} \textcircled{9} \\
 \textcircled{4} \textcircled{10} \textcircled{10} \textcircled{10} \textcircled{10} \\
 \cancel{5} \ \cancel{0} \ \cancel{0} \ \cancel{0} \ \cancel{0} \\
 - \quad \quad 3 \ 7 \ 7 \ 2 \\
 \hline
 4 \ 6 \ 2 \ 2 \ 8
 \end{array}$$

So, 46228 should be subtracted from 50000 to get 3772.

$$\begin{array}{r}
 \textcircled{14} \textcircled{12} \textcircled{13} \\
 \textcircled{5} \textcircled{4} \textcircled{2} \textcircled{3} \textcircled{18} \\
 \cancel{6} \ \cancel{5} \ \cancel{3} \ \cancel{4} \ \cancel{8} \\
 - \quad \quad 9 \ 9 \ 9 \ 9 \\
 \hline
 5 \ 5 \ 3 \ 4 \ 9
 \end{array}$$

So, 55349 should be subtracted from 65348 to get 9999.

$$\begin{array}{r}
 \textcircled{16} \\
 \textcircled{8} \textcircled{6} \textcircled{13} \\
 \cancel{9} \ \cancel{7} \ \cancel{3} \ 6 \\
 - \quad \quad 4 \ 7 \ 6 \ 1 \\
 \hline
 4 \ 9 \ 7 \ 5
 \end{array}$$

So, 4975 should be subtracted from 9736 to get 4761.

		T	Th	Th	H	T	O		
5.	Number of people entered before noon	=	$\textcircled{1}$	1	$\textcircled{1}$	5	9	4	2
	Number of people entered after noon	= +	1	4	9	4	0		
	Total number of people entered the stadium	=	3	0	8	8	2		

		T	Th	Th	H	T	O
	Capacity of the stadium =	6	$\textcircled{4}$	$\textcircled{14}$	$\textcircled{4}$	$\textcircled{10}$	7
	Number of people entered the stadium = -	3	0	8	8	2	
	Remaining capacity of the stadium =	3	4	6	2	5	

Thus, 34,625 more people can enter the stadium.



6. Number of men visited the Book Fair
 Number of women visited the Book Fair
 Total number of men and women visited

	Th	H	T	O
	4	2	7	5
+	3	5	4	9
=	7	8	2	4

- Total number of people visited the Book Fair
 Number of men and women visited the Book Fair
 Number of children visited

	TTh	Th	H	T	O
	~~1~~	0	2	5	0
-		7	8	2	4
=		2	4	2	6

Thus, 2426 children visited the Book Fair.

Learning Logs

1. a.

	①	①		①	
	5	7	3	6	
+	4	9	3	2	6
=	5	5	0	6	2

- b.

	①	①			
	6	4	3	6	4
+	1	8	7	2	3
=	8	3	0	8	7

- c.

	①	①			
	2	5	6	7	6
+	1	8	4	2	3
=	4	4	0	9	9

- d.

	①		①	①	
	3	5	8	9	6
+	4	7	0	6	4
=	8	2	9	6	0

2. a.

	9	8	7	6	0
-	5	6	3	4	0
=	4	2	4	2	0

- b.

		⑭	⑮	⑬	
	~~8~~	~~5~~	~~6~~	~~4~~	~~0~~
+	3	6	9	6	5
=	4	8	6	7	5

- c.

	⑥	⑬			
	7	3	9	6	4
-	2	8	8	5	3
=	4	5	1	1	1

- d.

	①	⑭	⑥	⑮	
	~~1~~	~~4~~	~~7~~	~~5~~	~~9~~
-		8	6	7	8
=		6	0	8	1

3. a.

	①	①	①	①	
	3	4	5	7	
	2	5	3	6	4
+	2	4	3	6	5
=	5	3	1	8	6

- b.

	①	①	①	②	
	4	4	7	9	
	1	7	3	2	8
+		4	5	3	6
=	2	6	3	4	3

- c.

	①	②	①	①	
	4	3	6	4	8
	1	6	9	3	2
+			7	9	6
=	6	1	3	7	6

- d.

	①	①	①		
	1	6	3	6	4
	5	3	3	4	1
+		5	3	6	4
=	7	5	0	6	9

4. a.

		⑨			
	①	⑩	⑭	④	⑮
	~~1~~	~~0~~	~~4~~	~~5~~	~~6~~
-		9	6	4	7
=		0	8	0	9

- b.

			⑨		
		⑥	⑩	⑭	
	8	7	~~0~~	~~4~~	6
-	5	3	2	6	4
=	3	3	7	8	2

- c.

			⑨		
		④	⑩	⑮	
	9	~~5~~	~~0~~	~~6~~	2
-	8	2	0	7	0
=	1	2	9	9	2

- d.

			②	⑫	
	6	7	~~3~~	~~2~~	6
-	1	3	2	9	5
=	5	4	0	3	1

- 5.

- Number of men
 Number of women
 Number of children
 Total population

	TTh	Th	H	T	O
	3	5	9	8	3
	2	2	8	4	7
+		6	0	8	5
=	6	4	9	1	5

Thus, the population of the area is 64,915.

- 6.

- Sugar bags produced by the first factory
 Sugar bags produced by the second factory
 Sugar bags produced by the third factory
 Total number of bags produced by the three factories

	TTh	Th	H	T	O
	3	9	8	4	7
	2	3	0	7	8
+	1	2	6	0	7
=	7	5	5	3	2

Therefore, the factories produced 75,532 bags of sugar together.

- 7.

- Votes received by candidate I
 Votes received by candidate II
 Votes received by candidate III
 Votes received by candidate IV
 Total valid votes

	TTh	Th	H	T	O
	3	8	4	5	7
	2	5	9	6	7
		9	6	3	8
+		8	7	5	
=	7	4	9	3	7

Total votes counted = Valid votes + Invalid votes

	TTh	Th	H	T	O
Valid votes	7	4	9	3	7
Invalid votes	+	3	2	5	7
=	7	8	1	9	4

Therefore, 78,194 votes were counted in all.

		T	Th	H	T	O
Cost of washing machine	= ₹	2	8	9	7	5
	= + ₹		7	6	7	2
Cost of computer	=	3	6	6	4	7

Total cost = $28975 + 36647 = ₹65622$

Therefore, the cost of computer is ₹36,647 and the total cost of the washing machine and the computer is ₹65,622.

	⑨				
③	⑩	⑩			
4	0	0	9	9	
- 1	7	8	5	5	
2	2	2	4	4	

So, 22244 should be added to 17855 to get 40099.

	⑪	⑨	⑮		
③	⑩	⑩	⑩	⑩	
4	2	0	6	0	
-	7	6	9	9	
3	4	3	6	1	

So, 34361 should be subtracted from 42060 to get 7699.

	T	Th	H	T	O	
Sum of two numbers	=	9	0	6	1	3
One number	= -	5	8	7	3	4
Other number	=	3	1	8	7	9

So, the other number is 31,879.

12. Milk produced = 80500 litres

Milk supplied to the first town = 38780 litres

Milk supplied to the second town = 18697 litres

Total milk supplied = $38780 + 18697$
 $= 57477$ litres

Milk left = $80500 - 57477 = 23023$ litres

Therefore, 23,023 litres of milk was left with the dairy.

Mental Maths

1. $5000 + 8 + 18 = 5026$

Thus, **c.** is the correct option.

2. $6567 + 9845 + 372 = 16784$

Thus, **b.** is the correct option.

3. 8 ten thousands + 5 thousands + 15 hundreds + 12 tens

$80000 + 5000 + 1500 + 120 = 86620$

Thus, **a.** is the correct option.

4. $8095 - 3002 = 5093$

Thus, **b.** is the correct option.

Mohan's monthly income	= ₹	7	5	8	3	0
Radhika's monthly income	= - ₹	5	9	0	8	9
Difference	=	1	6	7	4	1

Thus, **b.** is the correct option.

HOTS

1. a. Add the ones: $5 + 3 = 8$

Add the tens: $4 + \underline{\quad} = 6$

Or $6 - 4 = 2$

Add the hundreds: $\underline{\quad} + 4 = 0$

Or $10 - 4 = 6$ (Here, 1 will be carried forward)

Add the thousands: $3 + \underline{\quad} + 1$ (carried forward) = 0

Or $10 - 4 = 6$ (Here, 1 will be carried forward)

Add the ten thousands: $2 + 5 + 1$ (carried forward) = 8

①	①				
2	3	6	4	5	
+ 5	6	4	2	3	
8	0	0	6	8	

b. Same as above:

①	①	①			
7	3	6	4	5	
+ 1	8	9	6	4	
9	2	6	0	9	

	⑨				
⑥	⑩	⑩	③	⑬	
7	0	0	4	3	
- 1	9	7	3	8	
5	0	3	0	5	

	⑥	⑬	⑤	⑭	
5	7	3	6	4	
- 1	3	4	2	8	
4	3	9	3	6	

2. a. The greatest 4-digit number using 7, 9, 4, 0
 $= 9740$

b. The smallest 4-digit number using 7, 9, 4, 0
 $= 4079$

Difference = $9740 - 4079 = 5661$

9	7	4	0
- 4	0	7	9
5	6	6	1



CHAPTER 3 : MULTIPLICATION

Warm Up

- $6 \times 6 = 36$ kg
 - $7 \times 6 = 42$ kg
- $28 \times 2 = 56$ days
 - $28 \times 9 = 252$ days
- $15 \times 4 = 60$ cm
 - $22 \times 4 = 88$ cm
- $64 \times 6 = 384$ cm
 - $82 \times 6 = 492$ cm

Exercise 3A

- $123 \times 1 = 123$
 - $572 \times 1 = 572$
 - $457 \times 0 = 0$
 - $48 \times 165 = 165 \times 48$
 - $432 \times 522 = 522 \times 432$
 - $169 \times 215 = 215 \times 169$
 - $12 \times (16 \times 19) = (12 \times 16) \times 19$
 - $62 \times (93 \times 49) = (62 \times 93) \times 49$

	Column A		Column B
a.	$3 \times (4 \times 6)$ $= (3 \times 4) \times 6$	i.	Multiplicative property of 1
b.	$16 \times 0 = 0 \times 16$ $= 0$	ii.	Grouping property of multiplication
c.	$24 \times 1 = 1 \times 24$ $= 24$	iii.	Order property of multiplication
d.	$3 \times 6 = 6 \times 3$ $= 18$	iv.	Multiplicative property of 0

Exercise 3B

- $$\begin{array}{r} \textcircled{1} \textcircled{2} \\ 3 \ 4 \ 6 \\ \times \quad \quad 4 \\ \hline 1 \ 3 \ 8 \ 4 \end{array}$$
 - $$\begin{array}{r} \textcircled{2} \textcircled{1} \\ 2 \ 7 \ 6 \\ \times \quad \quad 3 \\ \hline 8 \ 2 \ 8 \end{array}$$
 - $$\begin{array}{r} \textcircled{2} \textcircled{3} \\ 4 \ 3 \ 5 \\ \times \quad \quad 6 \\ \hline 2 \ 6 \ 1 \ 0 \end{array}$$
 - $$\begin{array}{r} \textcircled{2} \textcircled{3} \\ 5 \ 0 \ 4 \\ \times \quad \quad 9 \\ \hline 4 \ 5 \ 3 \ 6 \end{array}$$
 - $$\begin{array}{r} \textcircled{1} \textcircled{3} \textcircled{2} \textcircled{4} \\ 1 \ 3 \ 2 \ 4 \\ \times \quad \quad 2 \\ \hline 2 \ 6 \ 4 \ 8 \end{array}$$
 - $$\begin{array}{r} \textcircled{2} \textcircled{0} \textcircled{4} \textcircled{3} \\ 2 \ 0 \ 4 \ 3 \\ \times \quad \quad 2 \\ \hline 4 \ 0 \ 8 \ 6 \end{array}$$
 - $$\begin{array}{r} \textcircled{3} \textcircled{2} \\ 1 \ 7 \ 0 \ 5 \\ \times \quad \quad 5 \\ \hline 8 \ 5 \ 2 \ 5 \end{array}$$
 - $$\begin{array}{r} \textcircled{1} \textcircled{1} \\ 2 \ 2 \ 4 \ 3 \\ \times \quad \quad 4 \\ \hline 8 \ 9 \ 7 \ 2 \end{array}$$

- Step 1. Write 214 in the expanded form along different blocks as shown.

Step 2. Multiply each by 3 and write the products as shown.

Step 3. Now, add the products.

$\times$	200	10	4
3	$200 \times 3 = 600$	$10 \times 3 = 30$	$4 \times 3 = 12$
$600 + 30 + 12 = 642$			

Therefore, $214 \times 3 = 642$.

$\times$	200	50	5
4	$200 \times 4 = 800$	$50 \times 4 = 200$	$5 \times 4 = 20$
$800 + 200 + 20 = 1020$			

Therefore, $255 \times 4 = 1020$.

$\times$	200	10	6
4	$200 \times 4 = 800$	$10 \times 4 = 40$	$6 \times 4 = 24$
$800 + 40 + 24 = 864$			

Therefore, $216 \times 4 = 864$.

$\times$	6000	200	70	1
6	$6000 \times 6 = 36000$	$200 \times 6 = 1200$	$70 \times 6 = 420$	$1 \times 6 = 6$
$36000 + 1200 + 420 + 6 = 37626$				

Therefore, $6271 \times 6 = 37626$.

$\times$	1000	600	30	5
8	$1000 \times 8 = 8000$	$600 \times 8 = 4800$	$30 \times 8 = 240$	$5 \times 8 = 40$
$8000 + 4800 + 240 + 40 = 13080$				

Therefore, $1635 \times 8 = 13080$.

$\times$	5000	800	70	3
2	$5000 \times 2 = 10000$	$800 \times 2 = 1600$	$70 \times 2 = 140$	$3 \times 2 = 6$
$10000 + 1600 + 140 + 6 = 11746$				

Therefore, $5873 \times 2 = 11746$.

$\times$	2000	600	40	8
7	$2000 \times 7 = 14000$	$600 \times 7 = 4200$	$40 \times 7 = 280$	$8 \times 7 = 56$
$14000 + 4200 + 280 + 56 = 18536$				

Therefore, $2648 \times 7 = 18536$.

$\times$	500	40	7
9	$500 \times 9 = 4500$	$40 \times 9 = 360$	$7 \times 9 = 63$
$4500 + 360 + 63 = 4923$			

Therefore, $547 \times 9 = 4923$.

i.	×	4000	0	20	7
	8	$4000 \times 8 = 32000$	$0 \times 8 = 0$	$20 \times 8 = 160$	$7 \times 8 = 56$
$32000 + 0 + 160 + 56 = 32216$					

Therefore, $4027 \times 8 = 32216$.

Exercise 3C

1. a. $57 \times 10 = 570$ b. $168 \times 10 = 1680$
c. $2413 \times 10 = 24130$ d. $93 \times 10 = 930$
e. $246 \times 10 = 2460$ f. $43 \times 30 = 1290$
g. $571 \times 40 = 22840$ h. $274 \times 60 = 16440$
i. $1345 \times 50 = 67250$

2. a.

×	1	2
×	1	4
+	4	8
+	1	2
+	1	6

b.

×	1	7	5
×	6	5	
+	8	7	5
+	1	0	5
+	1	1	3

c.

×	3	0	8
×	9	2	4
+	2	1	5
+	2	2	4

d.

×	3	5	4
×	7	0	8
+	1	7	7
+	1	8	4

3. a.

×	3	4
×	5	2
+	6	8
+	1	7
+	1	7

Alternative Method:

×	30	4
50	1500	200
2	60	8
	1560	208
$1560 + 208 = 1768$		

b.

×	7	8
×	3	5
+	3	9
+	2	3
+	2	7

Alternative Method:

×	70	8
30	2100	240
5	350	40
	2450	280
$2450 + 280 = 2730$		

c.

×	3	9
×	4	9
+	3	5
+	1	5
+	1	9

Alternative Method:

×	30	9
40	1200	360
9	270	81
	1470	441
$1470 + 441 = 1911$		

- d. Same as part (c): $148 \times 27 = 3996$
e. Same as part (c): $201 \times 59 = 11859$
f. Same as part (c): $543 \times 18 = 9774$
g. Same as part (c): $779 \times 26 = 20254$
h. Same as part (c): $495 \times 64 = 31680$
i. Same as part (c): $507 \times 65 = 32955$
j. Same as part (c): $1432 \times 58 = 83056$
k. Same as part (c): $3046 \times 12 = 36552$
l. Same as part (c): $1078 \times 37 = 39886$

Exercise 3D

1. a. $41 \times 100 = 4100$ b. $357 \times 100 = 35700$
c. $85 \times 100 = 8500$ d. $249 \times 100 = 24900$
e. $56 \times 200 = 11200$ f. $172 \times 300 = 51600$
g. $164 \times 500 = 82000$ h. $149 \times 90 = 13410$
i. $123 \times 800 = 98400$

2. a.

×	2	4	5
×	1	9	3
+	7	3	5
+	2	2	0
+	2	4	5

→ $100 + 90 + 3$
← 245×3
← 245×90
← 245×100

b.

×	2	0	7
×	3	0	8
+	1	6	5
+	0	0	0
+	6	2	1

→ $300 + 8$
← 207×8
← 207×0
← 207×300

c.

×	5	7	0
×	1	6	0
+	0	0	0
+	3	4	2
+	5	7	0

→ $100 + 60$
← 570×0
← 570×60
← 570×100



d.

1	7	1			
2	7	3	→ 200 + 70 + 3		
5 1 3			← 171 × 3		
1	1	9	7	0	← 171 × 70
+ 3	4	2	0	0	← 171 × 200
4 6 6 8 3					

3. a. 232×317 :

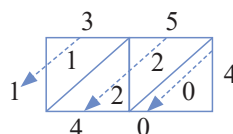
2	3	2			
3	1	7	→ 300 + 10 + 7		
1 6 2 4			← 232 × 7		
2 3 2 0			← 232 × 10		
+ 6	9	6	0	0	← 232 × 300
7 3 5 4 4					

- b. Same as above: $261 \times 189 = 49329$
 c. Same as above: $145 \times 264 = 38280$
 d. Same as above: $325 \times 249 = 80925$
 e. Same as above: $709 \times 113 = 80117$
 f. Same as above: $372 \times 160 = 59520$
 g. Same as above: $248 \times 403 = 99944$
 h. Same as above: $273 \times 304 = 82992$
 i. Same as above: $504 \times 130 = 65520$
 j. Same as above: $437 \times 141 = 61617$
 k. Same as above: $239 \times 241 = 57599$
 l. Same as above: $418 \times 205 = 85690$

Exercise 3E

1. a. 35×4 :

Therefore, $35 \times 4 = 140$.



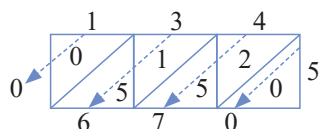
b. Same as part a:

$53 \times 7 = 371$

c. Same as part a:

$43 \times 8 = 344$

d. 134×5



Therefore, $134 \times 5 = 670$

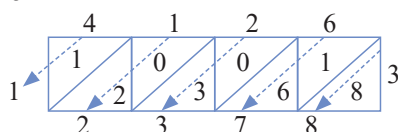
e. Same as part d:

$246 \times 8 = 1968$

f. Same as part d:

$372 \times 6 = 2232$

g. 4126×6



Therefore, $4126 \times 3 = 12378$

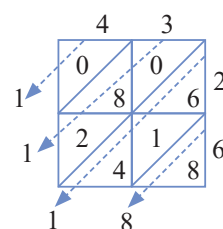
h. Same as part g:

$2343 \times 6 = 14058$

i. Same as part g:

$1783 \times 9 = 16047$

2. a.



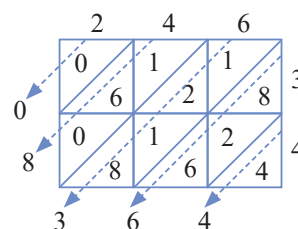
Therefore, $43 \times 26 = 1118$.

b. Same as part (a): $53 \times 73 = 3869$

c. Same as part (a): $84 \times 29 = 2436$

d. Same as part (a): $86 \times 54 = 4644$

e. 246×34 :

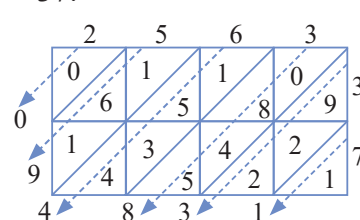


Therefore, $246 \times 34 = 8364$.

f. Same as part e: $543 \times 67 = 36381$

g. Same as part e: $298 \times 93 = 27714$

h. 2563×37 :



Therefore, $2563 \times 37 = 94831$.

Exercise 3F

1. a. 14×36 :

Rounding off 14 to nearest 10s = 10

Rounding of 36 to nearest 10s = 40

Estimated Product

Actual Product

	H	T	O
×	1	4	0
	4	0	0
	4	0	0

	H	T	O
×	1	4	0
	3	6	0
	5	0	4

b. 75×33 :

Rounding off 75 to nearest 10s = 80

Rounding of 33 to nearest 10s = 30

Estimated product

Actual Product

	Th	H	T	O
×			8	0
			3	0
	2	4	0	0

	Th	H	T	O
×			7	5
			3	3
	2	4	7	5

c. 44×41 :

Rounding off 44 to nearest 10s = 40

Rounding of 41 to nearest 10s = 40

Estimated product

Actual Product

	Th	H	T	O
×			4	0
			4	0
	1	6	0	0

	Th	H	T	O
×			4	4
			4	1
	1	8	0	4

d. 78×82 :

Rounding off 78 to nearest 10s = 80

Rounding of 82 to nearest 10s = 80

Estimated product

Actual Product

	Th	H	T	O
×			8	0
			8	0
	6	4	0	0

	Th	H	T	O
×			7	8
			8	2
	6	3	9	6

e. 42×68 :

Rounding off 42 to nearest 10s = 40

Rounding of 68 to nearest 10s = 70

Estimated product

Actual Product

	Th	H	T	O
×			4	0
			7	0
	2	8	0	0

	Th	H	T	O
×			4	2
			6	8
	2	8	5	6

f. 53×31 :

Rounding off 53 to nearest 10s = 50

Rounding of 31 to nearest 10s = 30

Estimated product

Actual Product

	Th	H	T	O
×			5	0
			3	0
	1	5	0	0

	Th	H	T	O
×			5	3
			3	1
	1	6	4	3

g. 397×26 :

Rounding off 397 to nearest 10s = 400

Rounding of 26 to nearest 10s = 30

Estimated product

Actual Product

	TTh	Th	H	T	O
×			4	0	0
			3	0	
	1	2	0	0	0

	TTh	Th	H	T	O
×			3	9	7
			2	6	
	1	0	3	2	2

h. 154×18 :

Rounding off 154 to nearest 10s = 150

Rounding of 18 to nearest 10s = 20

Estimated product

Actual Product

	Th	H	T	O
×		1	5	0
			2	0
	3	0	0	0

	Th	H	T	O
×		1	5	4
			1	8
	2	7	7	2

i. 327×46 :

Rounding off 327 to nearest 10s = 330

Rounding of 46 to nearest 10s = 50

Estimated product

Actual Product

	TTh	Th	H	T	O
×			3	3	0
				5	0
	1	6	5	0	0

	TTh	Th	H	T	O
×			3	2	7
				4	6
	1	5	0	4	2

j. 263×124 :

Rounding off 263 to nearest 10s = 260

Rounding of 124 to nearest 10s = 120

Estimated product

Actual Product

	TTh	Th	H	T	O
×			2	6	0
			1	2	0
	3	1	2	0	0

	TTh	Th	H	T	O
×			2	6	3
			1	2	4
	3	2	6	1	2

k. 127×268 :

Rounding off 127 to nearest 10s = 130

Rounding of 268 to nearest 10s = 270

Estimated product

Actual Product

	TTh	Th	H	T	O
×			1	3	0
			2	7	0
	3	5	1	0	0

	TTh	Th	H	T	O
×			1	2	7
			2	6	8
	3	4	0	3	6



1. 133×527 :

Rounding off 133 to nearest 10s = 130

Rounding off 527 to nearest 10s = 530

Estimated product

Actual Product

	T	Th	H	T	O
×			1	3	0
			5	3	0
	6	8	9	0	0

	T	Th	H	T	O
×			1	3	3
			5	2	7
	7	0	0	9	1

2. a. 109×267 :

Rounding off 109 to nearest 100s = 100

Rounding off 267 to nearest 100s = 300

Estimated Product

Actual Product

	T	Th	H	T	O
×			1	0	0
			3	0	0
	3	0	0	0	0

	T	Th	H	T	O
×			1	0	9
			2	6	7
	2	9	1	0	3

b. 445×123 :

Rounding off 445 to nearest 100s = 400

Rounding off 123 to nearest 100s = 100

Estimated Product

Actual Product

	T	Th	H	T	O
×			4	0	0
			1	0	0
	4	0	0	0	0

	T	Th	H	T	O
×			4	4	5
			1	2	3
	5	4	7	3	5

c. 198×364 :

Rounding off 198 to nearest 100s = 200

Rounding off 364 to nearest 100s = 400

Estimated Product

Actual Product

	T	Th	H	T	O
×			2	0	0
			4	0	0
	8	0	0	0	0

	T	Th	H	T	O
×			1	9	8
			3	6	4
	7	2	0	7	2

d. 176×248 :

Rounding off 176 to nearest 100s = 200

Rounding off 248 to nearest 100s = 200

Estimated Product

Actual Product

	T	Th	H	T	O
×			2	0	0
			2	0	0
	4	0	0	0	0

	T	Th	H	T	O
×			1	7	6
			2	4	8
	4	3	6	4	8

e. 325×278 :

Rounding off 325 to nearest 100s = 300

Rounding off 278 to nearest 100s = 300

Estimated Product

Actual Product

	T	Th	H	T	O
×			3	0	0
			3	0	0
	9	0	0	0	0

	T	Th	H	T	O
×			3	2	5
			2	7	8
	9	0	3	5	0

f. 190×127 :

Rounding off 190 to nearest 100s = 200

Rounding off 127 to nearest 100s = 100

Estimated Product

Actual Product

	T	Th	H	T	O
×			2	0	0
			1	0	0
	2	0	0	0	0

	T	Th	H	T	O
×			1	9	0
			1	2	7
	2	4	1	3	0

g. 235×168 :

Rounding off 235 to nearest 100s = 200

Rounding off 168 to nearest 100s = 200

Estimated Product

Actual Product

	T	Th	H	T	O
×			2	0	0
			2	0	0
	4	0	0	0	0

	T	Th	H	T	O
×			2	3	5
			1	6	8
	3	9	4	8	0

h. 154×356 :

Rounding off 154 to nearest 100s = 200

Rounding off 356 to nearest 100s = 400

Estimated Product

Actual Product

	T	Th	H	T	O
×			2	0	0
			4	0	0
	8	0	0	0	0

	T	Th	H	T	O
×			1	5	4
			3	5	6
	5	4	8	2	4

i. 204×320 :

Rounding off 204 to nearest 100s = 200

Rounding off 320 to nearest 100s = 300

Estimated Product

Actual Product

	T	Th	H	T	O
×			2	0	0
			3	0	0
	6	0	0	0	0

	T	Th	H	T	O
×			2	0	4
			3	2	0
	6	5	2	8	0

Exercise 3G

1. Number of books in 1 almirah = 353
Number of books in 234 almirahs
 $= 353 \times 234 = 82,602$ books.
Therefore, 82602 books can be kept in 234 almirahs.
2. Price of 1 book = ₹98
Price of 485 such books $= 98 \times 485 = ₹47,530$.
Therefore, price of 485 books is ₹47,530.
3. Number of passengers can sit in 1 bus = 65
Number of passengers can sit in 435 buses
 $= 65 \times 435 = 28,275$ passengers.
Therefore, 28,275 passengers can sit in 435 such buses.
4. Number of words typed in 1 minute = 62
Number of minutes in 4 hours $= 4 \times 60$
 $= 240$ minutes
Words typed in 240 minutes $= 62 \times 240$
 $= 14,880$ words.
Therefore, she will type 14880 words in 4 hours.
5. Rice in 1 bag = 38 kg
Rice in 25 such bags $= 38 \times 25 = 950$ kg
Therefore, 25 bags will contain 950 kg of rice.
6. Price of 1 table = ₹330
Price of 89 such tables $= 330 \times 89 = ₹29,370$.
Therefore, price of 89 tables will be ₹29,370
7. Price of 1 tricycle = ₹2765
Price of 27 such tricycles $= 2765 \times 27 = ₹74,655$.
Therefore, dealer has to pay ₹74,655 to the company.
8. Cost of apple per kg = ₹120
Cost of grapes per kg = ₹78
Cost of mangoes per kg = ₹85
Cost of oranges per kg = ₹45
 - a. Cost of 5 kg of grapes and 3 kg of mangoes
 $= 5 \times 78 + 3 \times 85 = ₹390 + ₹255 = ₹645$.
 - b. Cost of 8 kg of oranges and 4 kg of apples
 $= 8 \times 45 + 4 \times 120 = ₹360 + ₹480 = ₹840$.
 - c. Total cost for 2 kg of each item
 $= 2 \times 120 + 2 \times 78 + 2 \times 85 + 2 \times 45$
 $= ₹240 + ₹156 + ₹170 + ₹90 = ₹656$.

- d. Rani purchases 2 kg of apples, 3 kg of oranges and 1 kg of grapes, so total cost
 $= 2 \times 120 + 3 \times 45 + 1 \times 78$
 $= ₹240 + ₹135 + ₹78 = ₹453$.
Rani gives ₹500, so the shopkeeper will return
 $₹500 - ₹453 = ₹47$.

9. Number of cards in 1 pack = 52
Number of cards in 500 packs $= 500 \times 52 = 26,000$ cards.
Therefore, there are 26,000 cards in the box.
10. Number of apples on 1 tree = 195
Number of apples on 84 trees $= 195 \times 84$
 $= 16,380$ apples.
Therefore, the total number of apples on 84 trees is 16380.

Learning Logs

1. a. $4 \times 5 = \underline{5} \times 4$ b. $12 \times 19 = 19 \times \underline{12}$
c. $13 \times \underline{29} = 29 \times 13$ d. $\underline{1} \times 138 = 138$
e. $45 \times 0 = \underline{0}$ f. $517 \times \underline{0} = 0$
2. a. $49 \times 100 = \underline{4900}$ b. $\underline{908} \times 10 = 9080$
c. $36 \times 100 = \underline{3600}$ d. $87 \times 100 = \underline{8700}$
e. $205 \times 1000 = \underline{205000}$
f. $339 \times \underline{1000} = 339000$
3. a. $12 \times 20 = 12 \times (2 \times 10) = (12 \times 2) \times 10$
 $= 24 \times 10 = 240$
b. $17 \times 30 = 17 \times (3 \times 10) = (17 \times 3) \times 10$
 $= 51 \times 10 = 510$
c. $30 \times 40 = (3 \times 10) \times (4 \times 10)$
 $= (3 \times 4) \times (10 \times 10)$
 $= 12 \times 100 = 1200$
d. $47 \times 60 = 47 \times (6 \times 10) = (47 \times 6) \times 10$
 $= 282 \times 10 = 2820$
e. $115 \times 70 = 115 \times (7 \times 10) = (115 \times 7) \times 10$
 $= 805 \times 10 = 8050$
f. $248 \times 80 = 248 \times (8 \times 10) = (248 \times 8) \times 10$
 $= 1984 \times 10 = 19840$
4. a. $35 \times 300 = 35 \times (3 \times 100) = (35 \times 3) \times 100$
 $= 105 \times 100 = 10500$
b. $25 \times 500 = 25 \times (5 \times 100) = (25 \times 5) \times 100$
 $= 125 \times 100 = 12500$
c. $78 \times 600 = 78 \times (6 \times 100) = (78 \times 6) \times 100$
 $= 468 \times 100 = 46800$
d. $134 \times 700 = 134 \times (7 \times 100) = (134 \times 7) \times 100$
 $= 938 \times 100 = 93800$



e. $254 \times 200 = 254 \times (2 \times 100) = (254 \times 2) \times 100$
 $= 508 \times 100 = 50800$

f. $198 \times 400 = 198 \times (4 \times 100) = (198 \times 4) \times 100$
 $= 792 \times 100 = 79200$

5. a. 102×32 :

$$\begin{array}{r} \text{102} \\ \times \text{32} \\ \hline \text{204} \\ + \text{3060} \\ \hline \text{3264} \end{array}$$

b. 132×48 :

$$\begin{array}{r} \text{132} \\ \times \text{48} \\ \hline \text{1056} \\ + \text{5280} \\ \hline \text{6336} \end{array}$$

c. 278×51 :

$$\begin{array}{r} \text{278} \\ \times \text{51} \\ \hline \text{278} \\ + \text{13900} \\ \hline \text{14178} \end{array}$$

d. 1345×62 :

$$\begin{array}{r} \text{1345} \\ \times \text{62} \\ \hline \text{2690} \\ + \text{80700} \\ \hline \text{83390} \end{array}$$

e. 1987×12 :

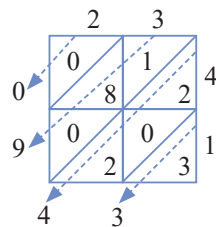
$$\begin{array}{r} \text{1987} \\ \times \text{12} \\ \hline \text{3974} \\ + \text{19870} \\ \hline \text{23844} \end{array}$$

f. 3729×23 :

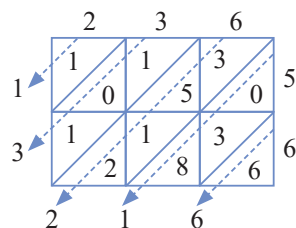
$$\begin{array}{r} \text{3729} \\ \times \text{23} \\ \hline \text{11187} \\ + \text{74580} \\ \hline \text{85767} \end{array}$$

6. a. 23×41 :

Therefore, $23 \times 41 = 943$

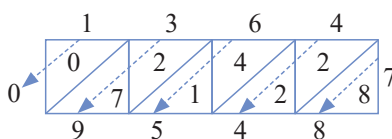


b. 236×56 :



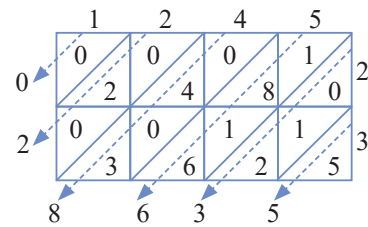
Therefore, $236 \times 56 = 13216$

c. 1364×7 :



Therefore, $1364 \times 7 = 9548$

d. 1245×23 :



Therefore, $1245 \times 23 = 28635$

7. a. Cost of making a refrigerator = ₹5,732

Cost of making 15 such refrigerator

$= 5732 \times 15 = ₹85,980$

Therefore, the cost of making 15 refrigerators is ₹85,980.

b. Distance travelled by train in a day = 556 km

Number of days in the month of January = 31.

Total distance travelled by the train in the month of January = $556 \times 31 = 17236$ km.

Therefore, total distance travelled by train in the month of January = 17236 km

c. Number of vehicles crossing the bridge per day = 674

Number of days in the month of May = 31

So, total number of vehicles crossing the bridge in the month of May = $674 \times 31 = 20894$.

d. Number of bags a lorry can carry = 265

Number of lorries = 312

Number of bags 312 lorries can carry

$= 265 \times 312 = 82680$.

e. Weight of a tennis ball = 48 g.

Weight of 312 such balls = 312×48

$= 14976$ g.

So, the weight of 312 such balls is 14976 g.

f. The number of bags of cement required to build one house = 445

Total number of houses = 135

So, the total number of bags required to build 135 houses is: $135 \times 445 = 60,075$

g. Number of pages in one notebook = 260

Number of notebooks = 200

So, the total number of pages in 200 notebooks is: $260 \times 200 = 52000$

Mental Maths

1. $100 \times 100 = 10000$

So, correct answer is c.

2. $100 \times 25 \times 0 = 0$

So, correct answer is c.

3. $(42 \times 16) \times 8 = 42 \times (16 \times 8)$

So, correct answer is a.

4. $35 \times 700 = 35 \times 7 \times 100 = 245 \times 100 = 24500$

So, correct answer is c.

5. $48 \times (24 \times 20) = (48 \times 24) \times 20$

So, correct answer is b.

6. $9999 \times 1000 = 1000 \times 9999$

So, correct answer is c.

7. $65 \times 0 \times 287 = 0$

So, correct answer is a.

HOTS

The circle is divided into four quadrants. In each quadrant, there are two outer numbers (located in the outer ring) and one inner number (located in the inner square).

The pattern of each quadrant is:

(Larger number + Smaller Number) $\times$ (Larger number – Smaller Number) = Inner Number

$$(5 + 3) \times (5 - 3) = 8 \times 2 = 16$$

$$(34 + 27) \times (34 - 27) = 61 \times 7 = 427$$

$$(12 + 8) \times (12 - 8) = 20 \times 4 = 80$$

$$(21 + 16) \times (21 - 16) = 37 \times 5 = 185.$$

Therefore, the missing number is 185.

CHAPTER 4 : DIVISION

Warm Up

1. We need to distribute 36 laddoos among 6 people. We can do this by distributing them one by one, like this:

- Give 1 laddoo to each of the 6 persons. Now each person has 1 laddoo, and we have distributed 6 laddoos in total.
- Give 1 more laddoo to each of the 6 persons. Now each person has 2 laddoos, and we have distributed another 6 laddoos, making the total 12 laddoos.

- Give another 1 laddoo to each of the 6 persons. Now each person has 3 laddoos, and we have distributed 6 more laddoos, making the total 18 laddoos.
- Continue in this way until each person has received 6 laddoos.

After distributing 6 laddoos to each person, the total number of laddoos distributed will be:

$$6 \text{ laddoos} \times 6 = 36 \text{ laddoos.}$$

Therefore, each person gets 6 laddoos.



2. Now, Chutki has 36 laddoos but needs to distribute them among 9 persons. We can do the same by distributing the laddoos one by one:

- Give 1 laddoo to each of the 9 persons. Now each person has 1 laddoo, and we have distributed 9 laddoos in total.
- Give 1 more laddoo to each of the 9 persons. Now each person has 2 laddoos, and we have distributed another 9 laddoos, making the total 18 laddoos.
- Give another 1 laddoo to each of the 9 persons. Now each person has 3 laddoos, and we have distributed 9 more laddoos, making the total 27 laddoos.
- Continue in this way until 36 laddoos are distributed. Now each person has 4 laddoos, and we have distributed 9 more laddoos, making the total 36 laddoos.

Therefore, each person will get $36 \div 9 = 4$ laddoos.



3. If Chutki shares the 36 laddoos among 3 persons, then we have $36 \div 3 = 12$
- Therefore, each person will get 12 laddoos.
4. a. $36 \div 6 = 6$ b. $36 \div 9 = 4$
c. $36 \div 3 = 12$



Exercise 4A

1. a. $85 \div 5 = 17$:

Dividend = 85, divisor = 5, quotient = 17

b. $112 \div 7 = 16$:

Dividend = 112, divisor = 7, quotient = 16

c. $16 \div 1 = 16$

d. $72 \div 72 = 1$

e. $125 \div 1 = 125$

f. $9 \div 9 = 1$

g. $27 \div 27 = 1$

h. $135 \div 135 = 1$

i. $0 \div 7 = 0$

j. $0 \div 16 = 0$

k. $0 \div 124 = 0$

2. a. $7 \times 5 = 35$; $35 \div 7 = 5$, $35 \div 5 = 7$

b. $16 \times 6 = 96$; $96 \div 16 = 6$, $96 \div 6 = 16$

c. $10 \times 12 = 120$; $120 \div 10 = 12$, $120 \div 12 = 10$

d. $14 \times 18 = 252$; $252 \div 14 = 18$, $252 \div 18 = 14$

e. $9 \times 15 = 135$; $135 \div 15 = 9$, $135 \div 9 = 15$

f. $23 \times 32 = 736$; $736 \div 23 = 32$, $736 \div 32 = 23$

3. a. $\text{Divisor} \rightarrow 4 \overline{) 77} \begin{array}{r} 19 \\ -4 \\ \hline 37 \\ -36 \\ \hline 1 \end{array}$
← Quotient (Q)
← Dividend
← Remainder (R)

Hence, the Dividend = 77, quotient = 19. and remainder = 1.

Checking:

$$\text{Quotient (Q)} \times \text{Divisor} + \text{Remainder (R)} \\ = 19 \times 4 + 1 = 76 + 1 = 77$$

The answer is the same as dividend. Therefore, the division is correct.

b. Same as above: $78 \div 5$: Quotient = 15 and Remainder = 3

c. Same as above: $84 \div 8$: Quotient = 10 and Remainder = 4

d. Same as above: $54 \div 3$: Quotient = 18 and Remainder = 0

e. Same as above: $80 \div 6$: Quotient = 13 and Remainder = 2

f. Same as above: $81 \div 7$: Quotient = 11 and Remainder = 4

g. Same as above: $46 \div 5$: Quotient = 9 and Remainder = 1

h. Same as above: $66 \div 7$: Quotient = 9 and Remainder = 3

Exercise 4B

1. a. $204 \div 4$:

So, Q = 51, R = 0

$$\begin{array}{r} 51 \\ 4 \overline{) 204} \\ -20 \\ \hline 4 \\ -4 \\ \hline 0 \end{array}$$

← Quotient (Q)
 ← Remainder (R)

Checking:

$$\text{Quotient} \times \text{Divisor} + \text{Remainder} = \text{Dividend}$$

$$51 \times 4 + 0 = 204$$

$$204 + 0 = 204$$

Therefore, the division is correct.

b. $108 \div 5$:

$$\begin{array}{r} 21 \\ 5 \overline{) 108} \\ -10 \\ \hline 08 \\ -5 \\ \hline 3 \end{array}$$

← Quotient (Q)
 ← Remainder (R)

c. $568 \div 2$:

$$\begin{array}{r} 284 \\ 2 \overline{) 568} \\ -4 \\ \hline 16 \\ -16 \\ \hline 08 \\ -8 \\ \hline 0 \end{array}$$

← Quotient (Q)
 ← Remainder (R)

d. $736 \div 9$:

$$\begin{array}{r} 81 \\ 9 \overline{) 736} \\ -72 \\ \hline 16 \\ -9 \\ \hline 7 \end{array}$$

← Quotient (Q)
 ← Remainder (R)

e. $465 \div 5$:

$$\begin{array}{r} 93 \\ 5 \overline{) 465} \\ -45 \\ \hline 15 \\ -15 \\ \hline 0 \end{array}$$

← Quotient (Q)
 ← Remainder (R)

f. $665 \div 7$:

$$\begin{array}{r} 95 \leftarrow \text{Quotient (Q)} \\ 7 \overline{) 665} \\ \underline{-63} \\ 35 \\ \underline{-35} \\ 0 \leftarrow \text{Remainder (R)} \end{array}$$

g. $477 \div 9$:

$$\begin{array}{r} 53 \leftarrow \text{Quotient (Q)} \\ 9 \overline{) 477} \\ \underline{-45} \\ 27 \\ \underline{-27} \\ 0 \leftarrow \text{Remainder (R)} \end{array}$$

h. $816 \div 6$:

$$\begin{array}{r} 136 \leftarrow \text{Quotient (Q)} \\ 6 \overline{) 816} \\ \underline{-6} \\ 21 \\ \underline{-18} \\ 36 \\ \underline{-36} \\ 0 \leftarrow \text{Remainder (R)} \end{array}$$

For parts b-h, follow the same checking method used in part a to check your answers.

2. a. $308 \div 3$:

So, $Q = 102$,
 $R = 2$

$$\begin{array}{r} 102 \leftarrow \text{Quotient (Q)} \\ 3 \overline{) 308} \\ \underline{-3} \\ 00 \\ \underline{-0} \\ 08 \\ \underline{-6} \\ 2 \leftarrow \text{Remainder (R)} \end{array}$$

Checking:

Quotient $\times$ Divisor + Remainder = Dividend

$$102 \times 3 + 2 = 308$$

$$306 + 2 = 308$$

$$308 = 308$$

Therefore, the division is correct.

b. $724 \div 8$:

$$\begin{array}{r} 90 \leftarrow \text{Quotient (Q)} \\ 8 \overline{) 724} \\ \underline{-72} \\ 04 \\ \underline{-0} \\ 4 \leftarrow \text{Remainder (R)} \end{array}$$

c. $654 \div 5$:

$$\begin{array}{r} 130 \leftarrow \text{Quotient (Q)} \\ 5 \overline{) 654} \\ \underline{-5} \\ 15 \\ \underline{-15} \\ 04 \\ \underline{-0} \\ 4 \leftarrow \text{Remainder (R)} \end{array}$$

d. $478 \div 9$:

$$\begin{array}{r} 53 \leftarrow \text{Quotient (Q)} \\ 9 \overline{) 478} \\ \underline{-45} \\ 28 \\ \underline{-27} \\ 1 \leftarrow \text{Remainder (R)} \end{array}$$

e. $841 \div 4$:

$$\begin{array}{r} 210 \leftarrow \text{Quotient (Q)} \\ 4 \overline{) 841} \\ \underline{-8} \\ 04 \\ \underline{-4} \\ 01 \\ \underline{-0} \\ 1 \leftarrow \text{Remainder (R)} \end{array}$$

f. $423 \div 5$:

$$\begin{array}{r} 84 \leftarrow \text{Quotient (Q)} \\ 5 \overline{) 423} \\ \underline{-40} \\ 23 \\ \underline{-20} \\ 3 \leftarrow \text{Remainder (R)} \end{array}$$

g. $760 \div 7$:

$$\begin{array}{r} 108 \leftarrow \text{Quotient (Q)} \\ 7 \overline{) 760} \\ \underline{-7} \\ 06 \\ \underline{-0} \\ 60 \\ \underline{-56} \\ 4 \leftarrow \text{Remainder (R)} \end{array}$$

h. $536 \div 5$:

$$\begin{array}{r} 107 \leftarrow \text{Quotient (Q)} \\ 5 \overline{) 536} \\ \underline{-5} \\ 03 \\ \underline{-0} \\ 36 \\ \underline{-35} \\ 1 \leftarrow \text{Remainder (R)} \end{array}$$



i. $7536 \div 6$:

$$\begin{array}{r}
 1256 \leftarrow \text{Quotient (Q)} \\
 6 \overline{) 7536} \\
 \underline{-6} \\
 15 \\
 \underline{-12} \\
 33 \\
 \underline{-30} \\
 36 \\
 \underline{-36} \\
 0 \leftarrow \text{Remainder (R)}
 \end{array}$$

j. $5476 \div 8$:

$$\begin{array}{r}
 684 \leftarrow \text{Quotient (Q)} \\
 8 \overline{) 5476} \\
 \underline{-48} \\
 67 \\
 \underline{-64} \\
 36 \\
 \underline{-32} \\
 4 \leftarrow \text{Remainder (R)}
 \end{array}$$

k. $2396 \div 7$:

$$\begin{array}{r}
 342 \leftarrow \text{Quotient (Q)} \\
 7 \overline{) 2396} \\
 \underline{-21} \\
 29 \\
 \underline{-28} \\
 16 \\
 \underline{-14} \\
 2 \leftarrow \text{Remainder (R)}
 \end{array}$$

l. $2095 \div 2$:

$$\begin{array}{r}
 1047 \leftarrow \text{Quotient (Q)} \\
 2 \overline{) 2095} \\
 \underline{-2} \\
 00 \\
 \underline{-0} \\
 09 \\
 \underline{-8} \\
 15 \\
 \underline{-14} \\
 1 \leftarrow \text{Remainder (R)}
 \end{array}$$

m. $8303 \div 4$:

$$\begin{array}{r}
 2075 \leftarrow \text{Quotient (Q)} \\
 4 \overline{) 8303} \\
 \underline{-8} \\
 03 \\
 \underline{-0} \\
 30 \\
 \underline{-28} \\
 23 \\
 \underline{-20} \\
 3 \leftarrow \text{Remainder (R)}
 \end{array}$$

n. $1597 \div 6$:

$$\begin{array}{r}
 266 \leftarrow \text{Quotient (Q)} \\
 6 \overline{) 1597} \\
 \underline{-12} \\
 39 \\
 \underline{-36} \\
 37 \\
 \underline{-36} \\
 1 \leftarrow \text{Remainder (R)}
 \end{array}$$

o. $7649 \div 9$:

$$\begin{array}{r}
 849 \leftarrow \text{Quotient (Q)} \\
 9 \overline{) 7649} \\
 \underline{-72} \\
 44 \\
 \underline{-36} \\
 89 \\
 \underline{-81} \\
 8 \leftarrow \text{Remainder (R)}
 \end{array}$$

p. $8311 \div 5$:

$$\begin{array}{r}
 1662 \leftarrow \text{Quotient (Q)} \\
 5 \overline{) 8311} \\
 \underline{-5} \\
 33 \\
 \underline{-30} \\
 31 \\
 \underline{-30} \\
 11 \\
 \underline{-10} \\
 1 \leftarrow \text{Remainder (R)}
 \end{array}$$

For parts b-p, follow the same checking method used in part a to check your answers.

3. a. $7548 \div 4$:

$$\begin{array}{r}
 1887 \leftarrow \text{Quotient (Q)} \\
 4 \overline{) 7548} \\
 \underline{-4} \\
 35 \\
 \underline{-32} \\
 34 \\
 \underline{-32} \\
 28 \\
 \underline{-28} \\
 0 \leftarrow \text{Remainder (R)}
 \end{array}$$

So, $Q = 1887$, $R = 0$

Checking:

Quotient $\times$ divisor + Remainder = Dividend

$$1887 \times 4 + 0 = 7548$$

$$7548 + 0 = 7548$$

Therefore, the division is correct.

b. $2416 \div 6$:

$$\begin{array}{r} 402 \leftarrow \text{Quotient (Q)} \\ 6 \overline{) 2416} \\ \underline{-24} \\ 01 \\ \underline{-0} \\ 16 \\ \underline{-12} \\ 4 \leftarrow \text{Remainder (R)} \end{array}$$

c. $1957 \div 6$:

$$\begin{array}{r} 326 \leftarrow \text{Quotient (Q)} \\ 6 \overline{) 1957} \\ \underline{-18} \\ 15 \\ \underline{-12} \\ 37 \\ \underline{-36} \\ 1 \leftarrow \text{Remainder (R)} \end{array}$$

d. $8437 \div 8$:

$$\begin{array}{r} 1054 \leftarrow \text{Quotient (Q)} \\ 8 \overline{) 8437} \\ \underline{-8} \\ 04 \\ \underline{-0} \\ 43 \\ \underline{-40} \\ 37 \\ \underline{-32} \\ 5 \leftarrow \text{Remainder (R)} \end{array}$$

e. $2059 \div 3$:

$$\begin{array}{r} 686 \leftarrow \text{Quotient (Q)} \\ 3 \overline{) 2059} \\ \underline{-18} \\ 25 \\ \underline{-24} \\ 19 \\ \underline{-18} \\ 1 \leftarrow \text{Remainder (R)} \end{array}$$

f. $2648 \div 4$:

$$\begin{array}{r} 662 \leftarrow \text{Quotient (Q)} \\ 4 \overline{) 2648} \\ \underline{-24} \\ 24 \\ \underline{-24} \\ 08 \\ \underline{-8} \\ 0 \leftarrow \text{Remainder (R)} \end{array}$$

g. $3153 \div 3$:

$$\begin{array}{r} 1051 \leftarrow \text{Quotient (Q)} \\ 3 \overline{) 3153} \\ \underline{-3} \\ 01 \\ \underline{-0} \\ 15 \\ \underline{-15} \\ 03 \\ \underline{-3} \\ 0 \leftarrow \text{Remainder (R)} \end{array}$$

h. $7585 \div 6$:

$$\begin{array}{r} 1264 \leftarrow \text{Quotient (Q)} \\ 6 \overline{) 7585} \\ \underline{-6} \\ 15 \\ \underline{-12} \\ 38 \\ \underline{-36} \\ 25 \\ \underline{-24} \\ 1 \leftarrow \text{Remainder (R)} \end{array}$$

For parts b-h, follow the same checking method used in part a to check your answers.

4. Given,

$$\text{Remainder} = \text{Dividend} - (\text{Quotient} \times \text{Divisor})$$

a. Quotient = 124, Divisor = 8, Dividend = 999

Substitute these values in the given formula.

$$\text{Remainder} = 999 - (124 \times 8) = 999 - 992 = 7.$$

So, the remainder is 7.

b. Quotient = 809, Divisor = 6, Dividend = 4858

Substitute these values in the given formula.

$$\begin{aligned} \text{Remainder} &= 4858 - (809 \times 6) \\ &= 4858 - 4854 = 4 \end{aligned}$$

So, the remainder is 4.

c. Same as given in part b: Remainder = 3.

d. Same as given in part b: Remainder = 8.

Exercise 4C

1. a. $94 \div 13$:

Step 1: $9 < 13$, so take 94 as a dividend and divide it by 13.

Step 2: Recite the multiplication table of 13.

$$13 \times 7 = 91 \text{ and } 13 \times 8 = 104$$

As $104 > 94 > 91$, write 7 in the ones place of



the quotient and 91 below 94.

Step 3: subtract 91 from 94.

We have $94 - 91 = 3$ as the remainder.

So, $Q = 7$ and $R = 3$

$$\begin{array}{r} 7 \leftarrow Q \\ 13 \overline{) 94} \\ \underline{-91} \\ 3 \leftarrow R \end{array}$$

Checking:

Quotient $\times$ Divisor + Remainder = Dividend

$$7 \times 13 + 3 = 94$$

$$91 + 3 = 94$$

Therefore, the division is correct.

b. $88 \div 43:$

$$\begin{array}{r} 2 \leftarrow Q \\ 43 \overline{) 88} \\ \underline{-86} \\ 2 \leftarrow R \end{array}$$

c. $72 \div 28:$

$$\begin{array}{r} 2 \leftarrow Q \\ 28 \overline{) 72} \\ \underline{-56} \\ 16 \leftarrow R \end{array}$$

d. $95 \div 30:$

$$\begin{array}{r} 3 \leftarrow Q \\ 30 \overline{) 95} \\ \underline{-90} \\ 5 \leftarrow R \end{array}$$

e. $78 \div 25:$

$$\begin{array}{r} 3 \leftarrow Q \\ 25 \overline{) 78} \\ \underline{-75} \\ 3 \leftarrow R \end{array}$$

f. $68 \div 32:$

$$\begin{array}{r} 2 \leftarrow Q \\ 32 \overline{) 68} \\ \underline{-64} \\ 4 \leftarrow R \end{array}$$

g. $90 \div 42:$

$$\begin{array}{r} 2 \leftarrow Q \\ 42 \overline{) 90} \\ \underline{-84} \\ 6 \leftarrow R \end{array}$$

h. $81 \div 55:$

$$\begin{array}{r} 1 \leftarrow Q \\ 55 \overline{) 81} \\ \underline{-55} \\ 26 \leftarrow R \end{array}$$

i. $96 \div 18:$

$$\begin{array}{r} 5 \leftarrow Q \\ 18 \overline{) 96} \\ \underline{-90} \\ 6 \leftarrow R \end{array}$$

j. $60 \div 24:$

$$\begin{array}{r} 2 \leftarrow Q \\ 24 \overline{) 60} \\ \underline{-48} \\ 12 \leftarrow R \end{array}$$

k. $84 \div 27:$

$$\begin{array}{r} 3 \leftarrow Q \\ 27 \overline{) 84} \\ \underline{-81} \\ 3 \leftarrow R \end{array}$$

l. $79 \div 63:$

$$\begin{array}{r} 1 \leftarrow Q \\ 63 \overline{) 79} \\ \underline{-63} \\ 16 \leftarrow R \end{array}$$

For parts b-l, follow the same checking method used in part a to check your answers.

2. a. $867 \div 14:$

Step 1: Since $8 < 14$, divide 86 by 14.

Here, 14 goes 6 times ($6 \times 14 = 84$) into 86 with a remainder of 2. Put 6 in the tens place of the quotient and bring down the next digit 7 alongside the remainder 2, to make it 27.

Step 2: Divide 27 by 14. Here 14 goes 1 time ($1 \times 14 = 14$) into 27 with a remainder of 13.

So, $Q = 61$, $R = 13$.

$$\begin{array}{r} 61 \leftarrow Q \\ 14 \overline{) 867} \\ \underline{-84} \\ 27 \\ \underline{-14} \\ 13 \leftarrow R \end{array}$$

Checking:

Quotient $\times$ Divisor + Remainder = Dividend

$$61 \times 14 + 13 = 867$$

$$854 + 13 = 867$$

$$867 = 867$$

Therefore, the division is correct.

b. $450 \div 12:$

$$\begin{array}{r} 37 \leftarrow Q \\ 12 \overline{) 450} \\ \underline{-36} \\ 90 \\ \underline{-84} \\ 6 \leftarrow R \end{array}$$

c. $864 \div 27$:

$$\begin{array}{r} 32 \leftarrow Q \\ 27 \overline{) 864} \\ \underline{-81} \\ 54 \\ \underline{-54} \\ 0 \leftarrow R \end{array}$$

d. $525 \div 32$:

$$\begin{array}{r} 16 \leftarrow Q \\ 32 \overline{) 525} \\ \underline{-32} \\ 205 \\ \underline{-192} \\ 13 \leftarrow R \end{array}$$

e. $837 \div 27$:

$$\begin{array}{r} 31 \leftarrow Q \\ 27 \overline{) 837} \\ \underline{-81} \\ 27 \\ \underline{-27} \\ 0 \leftarrow R \end{array}$$

f. $470 \div 55$:

$$\begin{array}{r} 8 \leftarrow Q \\ 55 \overline{) 470} \\ \underline{-440} \\ 30 \leftarrow R \end{array}$$

g. $562 \div 78$:

$$\begin{array}{r} 7 \leftarrow Q \\ 78 \overline{) 562} \\ \underline{-546} \\ 16 \leftarrow R \end{array}$$

h. $503 \div 32$:

$$\begin{array}{r} 15 \leftarrow Q \\ 32 \overline{) 503} \\ \underline{-32} \\ 183 \\ \underline{-160} \\ 23 \leftarrow R \end{array}$$

i. $564 \div 32$:

$$\begin{array}{r} 17 \leftarrow Q \\ 32 \overline{) 564} \\ \underline{-32} \\ 244 \\ \underline{-224} \\ 20 \leftarrow R \end{array}$$

j. $683 \div 51$:

$$\begin{array}{r} 13 \leftarrow Q \\ 51 \overline{) 683} \\ \underline{-51} \\ 173 \\ \underline{-153} \\ 20 \leftarrow R \end{array}$$

k. $390 \div 45$:

$$\begin{array}{r} 8 \leftarrow Q \\ 45 \overline{) 390} \\ \underline{-360} \\ 30 \leftarrow R \end{array}$$

l. $231 \div 57$:

$$\begin{array}{r} 4 \leftarrow Q \\ 57 \overline{) 231} \\ \underline{-228} \\ 3 \leftarrow R \end{array}$$

For parts b-I, follow the same checking method used in part a to check your answers.

3. a. $69 \div 24$:

Step 1: $6 < 24$, so take 69 as the dividend and divide it by 24.

Step 2: Recite the multiplication table of 24.

As $24 \times 2 = 48$, write 2 in the ones place of the quotient and 48 below 69.

Step 3: Subtract 48 from 69.

We have $69 - 48 = 21$ (remainder)

So, $Q = 2$ and $R = 21$

$$\begin{array}{r} 2 \leftarrow Q \\ 24 \overline{) 69} \\ \underline{-48} \\ 21 \leftarrow R \end{array}$$

Checking:

Quotient $\times$ Divisor + Remainder = Dividend

$$2 \times 24 + 21 = 69$$

$$48 + 21 = 69$$

$$69 = 69$$

Therefore, the division is correct.

b. $49 \div 18$ $Q = 2, R = 13$

c. $102 \div 20$ $Q = 5, R = 2$

d. $241 \div 26$ $Q = 9, R = 7$

e. $84 \div 17$ $Q = 4, R = 16$

f. $95 \div 16$ $Q = 5, R = 15$

g. $67 \div 41$ $Q = 1, R = 26$

h. $75 \div 28$ $Q = 2, R = 19$

i. $667 \div 21$ $Q = 31, R = 16$

j. $376 \div 14$ $Q = 26, R = 12$

k. $606 \div 49$ $Q = 12, R = 18$

l. $165 \div 67$ $Q = 2, R = 31$

For parts b-l check the answer same as part a.



4. We know that,
 $\text{Dividend} = \text{Quotient} \times \text{Divisor} + \text{Remainder}$
 So, $\text{Divisor} = \frac{\text{Dividend} - \text{Remainder}}{\text{Quotient}}$

a. Quotient = 85, Remainder = 6 and
 Dividend = 1026

$$\text{So, Divisor} = \frac{1026 - 6}{85} = 12$$

b. Quotient = 93, Remainder = 11 and
 Dividend = 2522

$$\text{So, Divisor} = \frac{2522 - 11}{93} = 27$$

Exercise 4D

1. a. $6456 \div 12$:

Step 1: Since $6 < 12$, divide 64 by 12.

Now, $12 \times 5 = 60$ and $12 \times 6 = 72$

So, $60 < 64$ and $72 > 64$

Thus, 12 goes into 60 five times.

Write 5 just above 4 in quotient and 60 below 64.

Step 2: Subtract 60 from 64 to get 4 as the remainder. Bring down 5 to it to make 45.

Step 3: Divide 45 by 12. 12 goes into 45 three times as $12 \times 3 = 36 < 45$. Write 3 next to 5 in the quotient and 36 below 45.

Step 4: Subtract 36 from 45 to get 9 as a remainder. Bring down 6 to make it 96.

Step 5: Divide 96 by 12. 12 goes into 96 eight times as $12 \times 8 = 96$. Write 8 next to 3 in the quotient and 96 below 96.

Step 6: Subtract 96 from 96 to get 0 as a remainder.

$$\begin{array}{r} 538 \leftarrow Q \\ 12 \overline{) 6456} \\ \underline{-60} \\ 45 \\ \underline{-36} \\ 96 \\ \underline{-96} \\ 0 \leftarrow R \end{array}$$

So, Quotient = 538, and remainder = 0.

Checking:

$\text{Quotient} \times \text{Divisor} + \text{Reminder} = \text{Dividend}$

$$538 \times 12 + 0 = 6456$$

$$6456 = 6456$$

Therefore, the division is correct.

$$\text{b. } 8795 \div 18 \quad Q = 488, R = 11$$

$$\text{c. } 7398 \div 63 \quad Q = 117, R = 27$$

$$\text{d. } 8775 \div 21 \quad Q = 417, R = 18$$

$$\text{e. } 8932 \div 31 \quad Q = 288, R = 4$$

$$\text{f. } 4349 \div 19 \quad Q = 228, R = 17$$

$$\text{g. } 9544 \div 24 \quad Q = 397, R = 16$$

$$\text{h. } 9256 \div 92 \quad Q = 100, R = 56$$

$$\text{i. } 2504 \div 56 \quad Q = 44, R = 40$$

$$\text{j. } 9045 \div 28 \quad Q = 323, R = 1$$

$$\text{k. } 5000 \div 17 \quad Q = 294, R = 2$$

$$\text{l. } 8726 \div 24 \quad Q = 363, R = 14$$

For parts b-I, follow the same checking method used in part a to check your answers.

2. a. $4092 \div 11$:

$$\begin{array}{r} 372 \leftarrow \text{Quotient} \\ 11 \overline{) 4092} \\ \underline{-33} \\ 79 \\ \underline{-77} \\ 22 \\ \underline{-22} \\ 0 \leftarrow \text{Remainder} \end{array}$$

So, $Q = 372$ and $R = 0$

Checking:

$\text{Quotient} \times \text{Divisor} + \text{Remainder} = \text{Dividend}$

$$372 \times 11 + 0 = 4092$$

$$4092 + 0 = 4092$$

Therefore, the division is correct.

$$\text{b. } 1974 \div 14 \quad Q = 141, R = 0$$

$$\text{c. } 4503 \div 12 \quad Q = 375, R = 3$$

$$\text{d. } 5700 \div 12 \quad Q = 475, R = 0$$

$$\text{e. } 1564 \div 23 \quad Q = 68, R = 0$$

$$\text{f. } 5039 \div 32 \quad Q = 157, R = 15$$

$$\text{g. } 3709 \div 18 \quad Q = 206, R = 1$$

$$\text{h. } 3274 \div 29 \quad Q = 112, R = 26$$

$$\text{i. } 4444 \div 28 \quad Q = 158, R = 20$$

$$\text{j. } 9314 \div 26 \quad Q = 358, R = 6$$

$$\text{k. } 7756 \div 20 \quad Q = 387, R = 16$$

$$\text{l. } 9999 \div 33 \quad Q = 303, R = 0$$

For parts b-I check the answer same as part a.

Exercise 4E

1. a. $72 \div 10$:

When a number is divided by 10, the digit in the ones place of the dividend forms the remainder and the rest of the digits form the quotient.

Here digit in the ones place is 2 and other digit is 7.

So, $Q = 7$ and $R = 2$

- b. $82 \div 10$ $Q = 8$ and $R = 2$
 c. $64 \div 10$ $Q = 6$ and $R = 4$
 d. $340 \div 10$ $Q = 34$ and $R = 0$
 e. $135 \div 10$ $Q = 13$ and $R = 5$
 f. $936 \div 10$ $Q = 93$ and $R = 6$
 g. $1364 \div 10$ $Q = 136$ and $R = 4$
 h. $2796 \div 10$ $Q = 279$ and $R = 6$

For parts b-h, follow the same checking method used in part a to check your answers.

2. a. $641 \div 100$:

When a number is divided by 100, the digit in the ones and tens places of the dividend forms the remainder and the rest of the digits form the quotient.

Here digit at the tens and ones places form 41.

So, $Q = 6$ and $R = 41$

- b. $868 \div 100$ $Q = 8$ and $R = 68$
 c. $550 \div 100$ $Q = 5$ and $R = 50$
 d. $708 \div 100$ $Q = 7$ and $R = 8$
 e. $900 \div 100$ $Q = 9$ and $R = 0$
 f. $2365 \div 100$ $Q = 23$ and $R = 65$
 g. $3708 \div 100$ $Q = 37$ and $R = 8$
 h. $5064 \div 100$ $Q = 50$ and $R = 64$

For parts b-h, follow the same checking method used in part a to check your answers.

3. a. $2033 \div 1000$

When a number is divided by 1000, the digit in the hundreds, tens and ones places of the dividend form the remainder and the rest of the digits form the quotient.

Here digit at the hundreds, tens and ones places form 033.

So, $Q = 2$ and $R = 33$

- b. $3655 \div 1000$ $Q = 3$ and $R = 655$
 c. $5009 \div 1000$ $Q = 5$ and $R = 9$
 d. $4603 \div 1000$ $Q = 4$ and $R = 603$
 e. $9300 \div 1000$ $Q = 9$ and $R = 300$
 f. $5784 \div 1000$ $Q = 5$ and $R = 784$

For parts b-f, follow the same checking method used in part a to check your answers.

Exercise 4F

1. a. $81 \div 18$ 81 rounds to 80
 18 rounds to 20

So, $81 \div 18 \rightarrow 80 \div 20$

We have $Q = 4$ and $R = 0$

Thus, the estimated quotient is 4.

- b. Same as above: $95 \div 14 \rightarrow 100 \div 10$

The estimated quotient = 10

- c. Same as above: $88 \div 34 \rightarrow 90 \div 30$

The estimated quotient = 3

- d. $257 \div 28$ 257 rounds to 300

28 rounds to 30

So, $257 \div 28 \rightarrow 300 \div 30$

The estimated quotient = 10

- e. Same as above: $402 \div 44 \rightarrow 400 \div 40$

The estimated quotient = 10

- f. Same as above: $1821 \div 22$

1821 rounds to 2000

22 rounds to 20

So, $1821 \div 22 \rightarrow 2000 \div 20$

The estimated quotient = 100

- g. Same as part f. $4620 \div 48 \rightarrow 5000 \div 50$

The estimated quotient = 100

- h. Same as part f. $2004 \div 53 \rightarrow 2000 \div 50$

The estimated quotient = 40

- 2.

	Column A (Division)		Column B (Rounds to)		Column C (Estimated quotients)
a.	$76 \div 24$	i.	$90 \div 30$	I.	5
b.	$93 \div 27$	ii.	$300 \div 60$	II.	3
c.	$573 \div 42$	iii.	$80 \div 20$	III.	10
d.	$305 \div 61$	iv.	$900 \div 90$	IV.	15
e.	$857 \div 93$	v.	$600 \div 40$	V.	4



Exercise 4G

1. Cost of 8 bats = ₹ 35,600

Then, cost of 1 bat

$$= \text{Total cost of 8 bats} \div 8$$

$$= 35,600 \div 8 = 4,450$$

So, the cost of one bat is ₹4,450.

$$\begin{array}{r} 4450 \\ 8 \overline{) 35600} \\ \underline{-32} \\ 36 \\ \underline{-32} \\ 40 \\ \underline{-40} \\ 00 \\ \underline{-00} \\ 0 \end{array}$$

2. Total cost for 7 trips = ₹8,470

Then, cost for 1 trip

$$= \text{Total cost for 7 trips} \div 7$$

$$8,470 \div 7 = 1,210$$

Thus, each trip to Agra costs ₹1,210.

$$\begin{array}{r} 1210 \\ 7 \overline{) 8470} \\ \underline{-7} \\ 14 \\ \underline{-14} \\ 07 \\ \underline{-7} \\ 00 \\ \underline{-0} \\ 0 \end{array}$$

3. Number of words composed in 24 minutes = 1800

Then, number of words composed in 1 minute

$$= \text{Total words composed} \div 24$$

$$= 1800 \div 24 = 75$$

So, the computer operator composes

75 words per minute.

$$\begin{array}{r} 75 \\ 24 \overline{) 1800} \\ \underline{-168} \\ 120 \\ \underline{-120} \\ 0 \end{array}$$

4. Cost of one pen = ₹18

Number of pens can be bought in ₹648

$$= \text{Total amount} \div \text{cost of one pen}$$

$$= 648 \div 18 = 36$$

Thus, 36 pens can be bought for ₹648.

$$\begin{array}{r} 36 \\ 18 \overline{) 648} \\ \underline{-54} \\ 108 \\ \underline{-108} \\ 0 \end{array}$$

5. Total number of pages in 10 notebooks = 1450

Number of pages in one notebook

$$= \text{Total number of pages}$$

$$\div \text{Number of notebooks}$$

$$= 1450 \div 10 = 145$$

So, each notebook contains 145 pages.

$$\begin{array}{r} 145 \\ 10 \overline{) 1450} \\ \underline{-10} \\ 45 \\ \underline{-40} \\ 50 \\ \underline{-50} \\ 0 \end{array}$$

6. Total number of students = 816

Number of groups = 12

Students per group

$$= \text{Total number of students}$$

$$\div \text{Number of groups}$$

$$= 816 \div 12 = 68$$

There are 68 students in each group.

$$\begin{array}{r} 68 \\ 12 \overline{) 816} \\ \underline{-72} \\ 96 \\ \underline{-96} \\ 0 \end{array}$$

7. Total number of music videos in 24

CDs = 3048

So the music videos per CD

$$= \text{Total music videos} \div 24$$

$$= 3048 \div 24 = 127$$

Thus, each CD contains 127 music videos.

$$\begin{array}{r} 127 \\ 24 \overline{) 3048} \\ \underline{-24} \\ 64 \\ \underline{-48} \\ 168 \\ \underline{-168} \\ 0 \end{array}$$

8. Total number of balls in 30 boxes = 690

Then, number of balls in one box

$$= \text{Total balls} \div 30$$

$$= 690 \div 30 = 23$$

There are 23 balls in each box.

$$\begin{array}{r} 23 \\ 30 \overline{) 690} \\ \underline{-60} \\ 90 \\ \underline{-90} \\ 0 \end{array}$$

9. Total number of stamps collected by

Rani in 38 weeks = 4788

Number of stamps collected in one week

$$= \text{Total stamps} \div 38$$

$$= 4788 \div 38 = 126$$

Hence, Rani collected 126 stamps in each week.

$$\begin{array}{r} 126 \\ 38 \overline{) 4788} \\ \underline{-38} \\ 98 \\ \underline{-76} \\ 228 \\ \underline{-228} \\ 0 \end{array}$$

10. The greatest 4-digit number = 9999

The greatest 2-digit number = 99

Now, divide 9999 by 99:

$$9999 \div 99 = 101$$

So, Q = 101 and R = 0

Thus the quotient is 101 and there is no remainder.

$$\begin{array}{r} 101 \\ 99 \overline{) 9999} \\ \underline{-99} \\ 09 \\ \underline{-0} \\ 99 \\ \underline{-99} \\ 0 \end{array}$$

f. Same as above: $954 \div 100$

Q = 9 and R = 54

g. Same as above: $7446 \div 100$

Q = 74 and R = 46

h. Same as above: $8987 \div 100$

Q = 89 and R = 87

i. $7958 \div 1000$:

When we divide a number by 1000, the last three digits of the dividend form the remainder, and the rest of the digits form the quotient.

The last three digits of 7985 form 985, so the remainder is 985. The rest of the digits, 7, form the quotient.

So, Q = 7 and R = 958.

j. Same as above: $9693 \div 1000$:

Q = 9 and R = 693.

5. a. $81 \div 18$

81 rounds to 80

18 rounds to 20

So, $81 \div 18 \rightarrow 80 \div 20$

So, estimated Q = 4 and R = 0

Now, $81 \div 18$

So, actual quotient = 4 and remainder = 9

$$\begin{array}{r} 4 \\ 18 \overline{) 81} \\ \underline{- 72} \\ 9 \end{array}$$

b. $56 \div 23$

56 rounds to 60

23 rounds to 20

So, $56 \div 23 \rightarrow 60 \div 20$

So, estimated Q = 3 and R = 0

Now, $56 \div 23$

So, actual quotient = 2 and remainder = 10

$$\begin{array}{r} 2 \\ 23 \overline{) 56} \\ \underline{- 46} \\ 10 \end{array}$$

c. $312 \div 29$

312 rounds to 300

29 rounds to 30

So, $312 \div 29 \rightarrow 300 \div 30$

So, estimated Q = 10 and R = 0

Now, $312 \div 29$

So, actual quotient = 10 and remainder = 22

$$\begin{array}{r} 10 \\ 29 \overline{) 312} \\ \underline{- 29} \\ 22 \\ \underline{- 0} \\ 22 \end{array}$$

d. $681 \div 53$

681 rounds to 700

53 rounds to 50

So, $681 \div 53 \rightarrow 700 \div 50$

So, estimated Q = 14 and R = 0

Now, $681 \div 53$

So, actual quotient = 12 and remainder = 45

$$\begin{array}{r} 12 \\ 53 \overline{) 681} \\ \underline{- 53} \\ 151 \\ \underline{- 106} \\ 45 \end{array}$$

e. $691 \div 51$

691 rounds to 700

51 rounds to 50

So, $691 \div 51 \rightarrow 700 \div 50$

So, estimated Q = 14 and R = 0

Now, $691 \div 51$

So, actual quotient = 13 and remainder = 28.

$$\begin{array}{r} 13 \\ 51 \overline{) 691} \\ \underline{- 51} \\ 181 \\ \underline{- 153} \\ 28 \end{array}$$

6. a. False.

Any number divided by itself (except zero) equals 1. For example, $5 \div 5 = 1$.

b. False. $0 \div \text{any number} = 0$. The result of dividing zero by any non-zero number is always zero.

c. False. This is not always true. The quotient depends on the dividend and divisor. For example, $12 \div 3 = 4$, where the quotient (4) is greater than the divisor (3).

d. False. Division by 1 is possible. Any number divided by 1 equals the number itself. For example, $5 \div 1 = 5$.

e. False. We can verify this using the formula
Dividend = Quotient $\times$ Divisor

Dividend = $5 \times 9 = 45$. The statement is incorrect. Correct dividend should be 45, not 49 (assuming the remainder is 0).

f. True. $4007 \div 100 = 40$ (quotient), with a remainder of $4007 - (40 \times 100) = 7$

So, the quotient is 40 and the remainder is 7.

7. a. Total number of hours = 5952

Number of hours in one day = 24

Number of days = $5952 \div 24$

= 248

There are 248 days in 5952 hours.

$$\begin{array}{r} 248 \\ 24 \overline{) 5952} \\ \underline{- 48} \\ 115 \\ \underline{- 96} \\ 192 \\ \underline{- 192} \\ 0 \end{array}$$

b. Total number of bangles = 576

1 dozen = 12

So, number of dozens of bangles

= Total number of bangles $\div$ 12

= $576 \div 12 = 48$

Thus, Payal has 48 dozens of bangles.

$$\begin{array}{r} 48 \\ 12 \overline{) 576} \\ \underline{- 48} \\ 96 \\ \underline{- 96} \\ 0 \end{array}$$

c. Total distance covered in 25 laps

$$\begin{array}{r} 114 \\ 25 \overline{) 2850} \\ \underline{-25} \\ 35 \\ \underline{-25} \\ 100 \\ \underline{-100} \\ 0 \end{array}$$

= 2850 m

Distance covered per lap

= Total distance covered $\div$ 25

= $2850 \div 25 = 114$ m

The distance covered in each lap is 114 m.

d. Total distance covered by aeroplane in 18 hours = 9396 km

$$\begin{array}{r} 522 \\ 18 \overline{) 9396} \\ \underline{-90} \\ 39 \\ \underline{-36} \\ 36 \\ \underline{-36} \\ 0 \end{array}$$

Distance covered in one hour

= Total distance $\div$ 18

= $9396 \div 18 = 522$ km

The, aeroplane flies 522 km in one hour.

e. Total number of children = 7072

$$\begin{array}{r} 221 \\ 32 \overline{) 7072} \\ \underline{-64} \\ 67 \\ \underline{-64} \\ 32 \\ \underline{-32} \\ 0 \end{array}$$

Number of rows = 32

Children per row

= Total number of children $\div$ number of rows

= $7072 \div 32 = 221$

There are 221 children in each row.

f. Product of two numbers = 9823

$$\begin{array}{r} 209 \\ 47 \overline{) 9823} \\ \underline{-94} \\ 42 \\ \underline{-0} \\ 423 \\ \underline{-423} \\ 0 \end{array}$$

Smaller number = 47

Smaller number $\times$ Bigger number

= Product

Bigger number

= Product $\div$ smaller number

= $9823 \div 47 = 209$

Therefore, the bigger number is 209.

g. Total number of crayons = 6398

$$\begin{array}{r} 266 \\ 24 \overline{) 6398} \\ \underline{-48} \\ 159 \\ \underline{-144} \\ 158 \\ \underline{-144} \\ 14 \end{array}$$

Each box contains 24 crayons

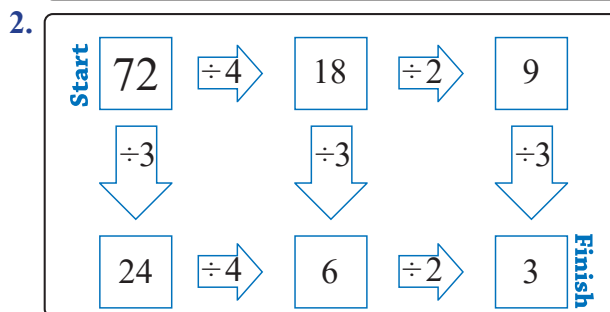
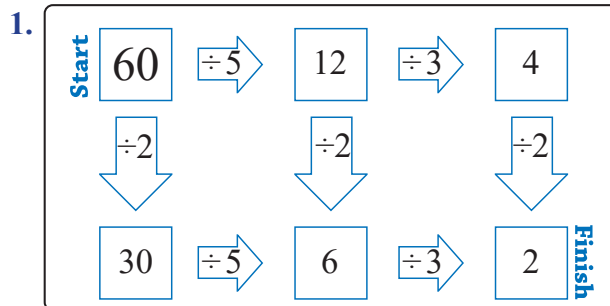
So, number of boxes = $6398 \div 24$

In the division, we get

Q = 266 and R = 14

Since there is a remainder 14, so 14 crayons left over.

Mental Maths



HOTS

1. a. Divide 3632 by 5,
- Here remainder is 2. To make 3632 divisible by 5, we need to add the difference between 5 and remainder i.e. 2.
- $$\begin{array}{r} 726 \\ 5 \overline{) 3632} \\ \underline{-35} \\ 13 \\ \underline{-10} \\ 32 \\ \underline{-30} \\ 2 \end{array}$$
- $5 - 2 = 3$
- So, 3 must be added to 3632 to make it divisible by 5.
- b. Same as above: Answer 4
- c. Same as above: Answer 4
- d. Same as above: Answer 4

Puzzle

Step 1: Case 1 (4 students per bench)

When 4 students sit on each bench, the total number of students seated on 16 benches is:

$$4 \times 16 = 64 \text{ students}$$

Since 6 students do not get a seat, the total number of students in the group is:

$$64 + 6 = 70 \text{ students}$$

Step 2: Case 2 (5 students per bench)

When 5 students sit on each bench, 2 benches are left vacant. This means only 14 benches are being used.

$$5 \times 14 = 70 \text{ students}$$

This confirms that there are 70 students in total.



CHAPTER 5 : MULTIPLES AND FACTORS

Warm Up

1. a.

Number of rows	1	2	3	4	5	6	7	8	9	10
Number of camels	3	6	9	12	15	18	21	24	27	30

2. b.



There are 2 groups of 6 dancers each.

So, 2 $\times$ 4 = 12.

c.

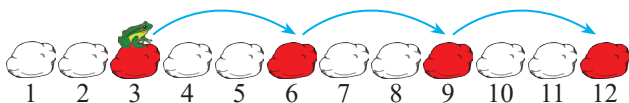


There are 3 groups of 4 dancers each.

So, 3 $\times$ 4 = 12.

Exercise 5A

1.



2. a. First six multiples of 7 are:

$$7 \times 1 = 7; \quad 7 \times 2 = 14; \quad 7 \times 3 = 21;$$

$$7 \times 4 = 28; \quad 7 \times 5 = 35; \quad 7 \times 6 = 42$$

Thus, the first six multiples of 7 are 7, 14, 21, 28, 35, and 42.

b. Same as above.

Thus, the first six multiples of 9 are 9, 18, 27, 36, 45, and 54.

c. Same as above.

Thus, the first six multiples of 11 are 11, 22, 33, 44, 55, and 66.

d. Same as above.

Thus, the first six multiples of 15 are 15, 30, 45, 60, 75, and 90.

e. Same as above.

Thus, the first six multiples of 18 are 18, 36, 54, 72, 90, and 108.

f. Same as above.

Thus, the first six multiples of 25 are 25, 50, 75, 100, 125, and 150.

3. a. The first five even numbers are 2, 4, 6, 8 and 10. Multiply each of these even numbers by 5.

$$5 \times 2 = 10; \quad 5 \times 4 = 20; \quad 5 \times 6 = 30;$$

$$5 \times 8 = 40; \quad 5 \times 10 = 50$$

Thus, the first five even multiples of 5 are 10, 20, 30, 40, and 50.

b. Same as above.

Thus, the first five even multiples of 7 are 14, 28, 42, 56, and 70.

c. Same as above.

Thus, the five even multiples of 11 are 22, 44, 66, 88, and 110.

d. Same as above.

Thus, the five even multiples of 13 are 26, 52, 78, 104, and 130.

e. Same as above.

Thus, the five even multiples of 15 are 30, 60, 90, 120, and 150.

f. Same as above.

Thus, the five even multiples of 25 are 50, 100, 150, 200, and 250.

4. a. The first five odd numbers are 1, 3, 5, 7, and 9. Multiply each of these odd numbers by 3.

$$3 \times 1 = 3;$$

$$3 \times 3 = 9;$$

$$3 \times 5 = 15;$$

$$3 \times 7 = 21;$$

$$3 \times 9 = 27$$

Thus, the first five odd multiples of 3 are 3, 9, 15, 21, and 27.

b. Same as above.

Thus, the first five odd multiples of 17 are 17, 51, 85, 119, and 153.

c. Same as above.

Thus, the first five odd multiples of 19 are 19, 57, 95, 133, and 171.

d. Same as above.

Thus, the first five odd multiples of 21 are 21, 63, 105, 147, and 189.

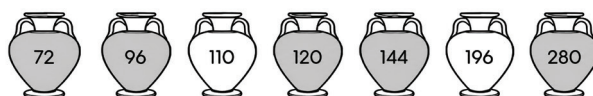
e. Same as above.

Thus, the first five odd multiples of 27 are 27, 81, 135, 189, and 243.

f. Same as above.

Thus, the first five odd multiples of 35 are 35, 105, 175, 245, and 315.

5.



6. a. $8 \times 5 = 40$

Thus, the 5th multiple of 8 = 40.

b. $9 \times 8 = 72$

Thus, the 8th multiple of 9 is 72.

c. Multiples of 12 are

$12 \times 1 = 12$, $12 \times 2 = 24$, $12 \times 3 = 36$, $12 \times 4 = 48$, $12 \times 5 = 60$, $12 \times 6 = 72$, $12 \times 7 = 84$, $12 \times 8 = 96$, $12 \times 9 = 108$, $12 \times 10 = 120$, $12 \times 11 = 132$, $12 \times 12 = 144$

Since we are writing multiples of 12 less than 144, we do not consider 144 or more than 144.

Thus, the multiples of 12 less than 144 are 12, 24, 36, 48, 60, 72, 84, 96, 108, 120, and 132.

d. Multiples of 3 are

$3 \times 1 = 3$, $3 \times 2 = 6$, $3 \times 3 = 9$, $3 \times 4 = 12$, $3 \times 5 = 15$, $3 \times 6 = 18$, $3 \times 7 = 21$, $3 \times 8 = 24$, $3 \times 9 = 27$, $3 \times 10 = 30$, $3 \times 11 = 33$, $3 \times 12 = 36$, $3 \times 13 = 39$, $3 \times 14 = 42$, $3 \times 15 = 45$, $3 \times 16 = 48$, $3 \times 17 = 51$

Since we are writing multiples between 20 and 50, we do not consider numbers less than 20 and more than 50.

Thus, the multiples of 3 between 20 and 50 are 21, 24, 27, 30, 33, 36, 39, 42, 45, 48.

e. Same as part d.

The multiples of 9 between 50 and 100 are 54, 63, 72, 81, 90, and 99.

f. The first multiple of 9 which is exactly divisible by 8 = $9 \times 8 = 72$.

7. To check if a number is a multiple of another number, we divide the first number by the second number. If it is divisible, then it is a multiple, otherwise not.

a. $33 \div 2$: Quotient = 16 and remainder = 1

Since, 33 is not exactly divisible by 2, it is not a multiple of 2.

Therefore, the statement is false.

b. $45 \div 5$: Quotient = 9 and remainder = 0

Since 45 is exactly divisible by 5, it is a multiple of 5.

Therefore, the statement is true.

c. Same as above.

The statement is true.

d. Same as above.

The statement is false.

e. Same as above.

The statement is true.

f. Same as above.

The statement is true.

8. a. The difference between consecutive numbers:

$$32 - 24 = 8, 40 - 32 = 8$$

So, the numbers are multiples of 8:

$$8 \times 3 = 24, 8 \times 4 = 32, 8 \times 5 = 40$$

Next three multiples of 8 are:

$$8 \times 6 = 48, 8 \times 7 = 56, 8 \times 8 = 64.$$

b. The difference between consecutive numbers:

$$54 - 45 = 9, 63 - 54 = 9$$

So, the numbers are multiples of 9:

$$9 \times 5 = 45, 9 \times 6 = 54, 9 \times 7 = 63$$

Next three multiples of 9 are:

$$9 \times 8 = 72, 9 \times 9 = 81, 9 \times 10 = 90.$$

c. The difference between consecutive numbers:

$$84 - 70 = 14, 98 - 84 = 14$$

So, the numbers are multiples of 14:

$$14 \times 10 = 140, 14 \times 11 = 154, 14 \times 12 = 168$$

Next three multiples of 14 are:

$$14 \times 13 = 182, 14 \times 14 = 196, 14 \times 15 = 210.$$

d. The difference between consecutive numbers:

$$45 - 30 = 15, 60 - 45 = 15$$

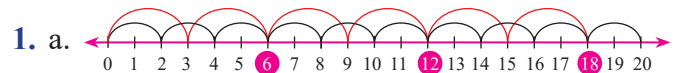
So, the numbers are multiples of 15:

$$15 \times 2 = 30, 15 \times 3 = 45, 15 \times 4 = 60$$

Next three multiples of 15 are:

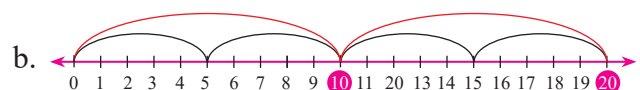
$$15 \times 5 = 75, 15 \times 6 = 90, 15 \times 7 = 105.$$

Exercise 5B



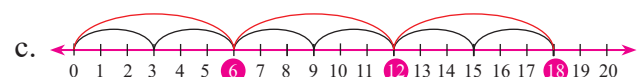
Thus, the common multiples of 2 and 3 are:

6, 12 and 18.



Thus, the common multiples of 5 and 10 are:

10 and 20.



Thus, the common multiples of 3 and 6 are:

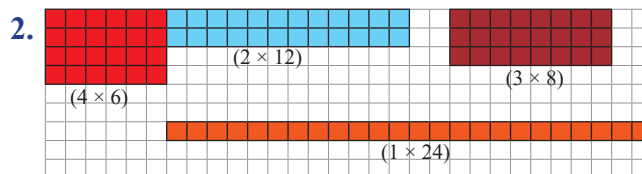
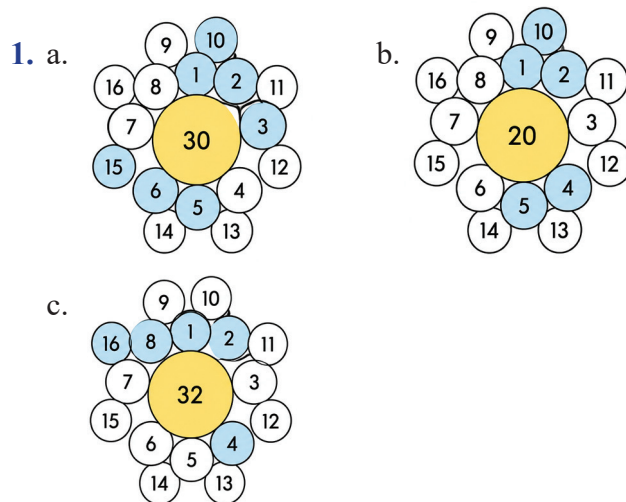
6, 12 and 18.



2. a. Multiples of 4 are: 4, 8, 12, 16, 20, 24, 28, 32, 36, 40, 44, 48, 52, 56, 60, 64, 68, 72, 76, 80.
Multiples of 5 are: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80.
Thus, the first four common multiples of 4 and 5 are 20, 40, 60, and 80.
- b. Multiples of 2 are: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40.
Multiples of 5 are: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60.
Thus, the first four common multiples of 2 and 5 are 10, 20, 30, and 40.
- c. Multiples of 2 are: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60.
Multiples of 7 are: 7, 14, 21, 28, 35, 42, 49, 56, 63, 70, 77, 84, 91, 98.
Thus, the first four common multiples of 2 and 7 are 14, 28, 42, and 56.
- d. Multiples of 10 are: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120.
Multiples of 20 are: 20, 40, 60, 80, 100, 120, 140, 160.
Thus, the first four common multiples of 10 and 20 are 20, 40, 60 and 80.
- e. Multiples of 6 are: 6, 12, 18, 24, 30, 36, 42, 48, 54, 60, 66, 72, 78, 84, 90, 96, 102, 108.
Multiples of 8 are: 8, 16, 24, 32, 40, 48, 56, 64, 72, 80, 88, 96, 104, 112, 120.
Thus, the first four common multiples of 6 and 8 are 24, 48, 72, and 96.
3. a. Multiples of 2 are: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40.
Multiples of 9 are: 9, 18, 27, 36, 45, 54, 63, 72, 81, 90, 99, 108, 117, 126, 135, 144.
The common multiples of 2 and 9 are 18, 36.
Therefore, the smallest common multiple of 2 and 9 is 18.
- b. Multiples of 5 are: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70.
Multiples of 6 are: 6, 12, 18, 24, 30, 36, 42, 48, 54, 60, 66, 72.
The common multiples of 5 and 6 are 30 and 60.
Therefore, the smallest common multiple of 5 and 6 is 30.

- c. Multiples of 8 are: 8, 16, 24, 32, 40, 48, 56, 64, 72, 80, 80.
Multiples of 12 are: 12, 24, 36, 48, 60, 72, 84, 96, 108, 120.
The common multiples of 8 and 12 are 24, 48, and 72.
Therefore, the smallest common multiple of 8 and 12 is 24.
- d. Multiples of 10 are: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130, 140.
Multiples of 15 are: 15, 30, 45, 60, 75, 90, 105, 120, 135, 150.
The common multiples of 10 and 15 are 30, 60, 90, and 120.
Therefore, the smallest common multiple of 10 and 15 is 30.
- e. Multiples of 15 are: 15, 30, 45, 60, 75, 90, 105, 120, 135, 150.
Multiples of 20 are: 20, 40, 60, 80, 100, 120, 140, 160, 180, 200.
The common multiples of 15 and 20 are 60 and 120.
Therefore, the smallest common multiple of 15 and 20 is 60.

Exercise 5C



Thus, the factors of 24 are 1, 2, 3, 4, 6, 8, 12, and 24.

3. a. $1 \times 45 = 45 \rightarrow 1$ and 45 are the factors of 45.
 $3 \times 15 = 45 \rightarrow 3$ and 15 are the factors of 45.
 $5 \times 9 = 45 \rightarrow 5$ and 9 are the factors of 45.
 Thus, the factors of 45 are 1, 3, 5, 9, 15, and 45.
- b. $1 \times 56 = 56 \rightarrow 1$ and 56 are the factors of 56.
 $2 \times 28 = 56 \rightarrow 2$ and 28 are the factors of 56.
 $4 \times 14 = 56 \rightarrow 4$ and 14 are the factors of 56.
 $7 \times 8 = 56 \rightarrow 7$ and 8 are the factors of 56.
 Thus, the factors of 56 are 1, 2, 4, 7, 8, 14, 28, and 56.
- c. $1 \times 72 = 72 \rightarrow 1$ and 72 are the factors of 72.
 $2 \times 36 = 72 \rightarrow 2$ and 36 are the factors of 72.
 $3 \times 24 = 72 \rightarrow 3$ and 24 are the factors of 72.
 $4 \times 18 = 72 \rightarrow 4$ and 18 are the factors of 72.
 $6 \times 12 = 72 \rightarrow 6$ and 12 are the factors of 72.
 $8 \times 9 = 72 \rightarrow 8$ and 9 are the factors of 72.
 Thus, the factors of 72 are 1, 2, 3, 4, 6, 8, 9, 12, 18, 24, 36, and 72.
- d. $1 \times 39 = 39 \rightarrow 1$ and 39 are the factors of 39.
 $3 \times 13 = 39 \rightarrow 3$ and 13 are the factors of 39.
 Thus, the factors of 39 are 1, 3, 13, and 39.
- e. $1 \times 13 = 13 \rightarrow 1$ and 13 are the factors of 13.
 Thus, the factors of 13 are 1 and 13.

4. a.
$$\begin{array}{r} 22 \\ 8 \overline{) 176} \\ \underline{-16} \\ 16 \\ \underline{-16} \\ 0 \end{array} \quad \leftarrow \text{Remainder}$$

Since the remainder is 0, 8 is a factor of 176.

b.
$$\begin{array}{r} 11 \\ 12 \overline{) 140} \\ \underline{-12} \\ 20 \\ \underline{-12} \\ 8 \end{array} \quad \leftarrow \text{Remainder}$$

Since the remainder is not 0, 12 is not a factor of 140.

- c. 10, 160: Same as part (a).
 d. 15, 220: Same as part (b).
5. a. A number has exactly two factors if it can be divided only by 1 and itself. The number between 1 and 30 with this property are 2, 3, 5, 7, 11, 13, 17, 19, 23, and 29.

- b. A number has exactly four factors if it can be divided by 1, the number itself and exactly two other numbers. The numbers between 1 and 30 with exactly four factors are 6, 10, 12, 14, 15, 18, 20, 21, 22, 24, 26, and 28.
- c. A number has exactly three factors if it can be divided by 1, itself and one other number. The number between 1 and 30 with exactly three factors are 4, 9, and 25.
6. a. $70 \div 5 = 14$, remainder 0
 70 is exactly divisible by 5, 5 is a factor of 14.
 Thus, the statement is true.
- b. $92 \div 8 = 11$, remainder 4.
 92 is not divisible by 8, 8 is not a factor of 92.
 Thus, the statement is false.
- c. Same as part (a).
- d. $28 \div 0 =$ not defined.
 Thus, the statement is false.
- e. 1 can be divided only by 1 itself.
 Thus, the statement is false.
- f. $32 \div 32 = 1$, remainder 0.
 Thus, the statement is true.

Exercise 5D

1. a. 6 and 10:

$6 = 1 \times 6;$

$6 = 2 \times 3$

Factors of 6 are 1, 2, 3 and 6

$10 = 1 \times 10; 10 = 2 \times 5$

Factors of 10 are 1, 2, 5 and 10

So, the common factors of 6 and 10 are 1 and 2.

- b. Same as above.

Factors of 18

= 1, 2, 3, 6, 9, and 18

Factors of 21

= 1, 3, 7 and 21

Common factors of 18 and 21 are 1 and 3.

- c. Same as above.

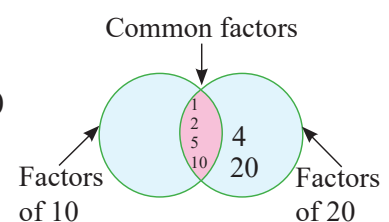
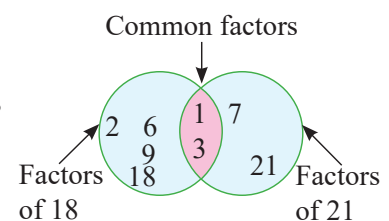
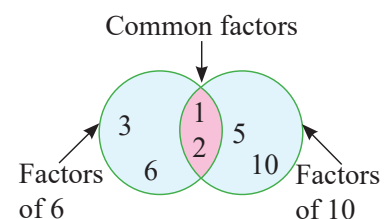
Factors of 10

= 1, 2, 5, and 10

Factors of 20

= 1, 2, 4, 5, 10 and 20

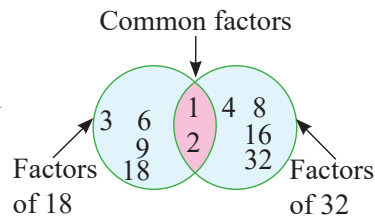
Common factors of 10 and 20 are 1, 2, 5 and 10.



- d. Same as above.
Factors of 18
= 1, 2, 3, 6, 9 and 18

Factors of 32
= 1, 2, 4, 8,
16 and 32

Common factors of 18 and 32 are 1 and 2.



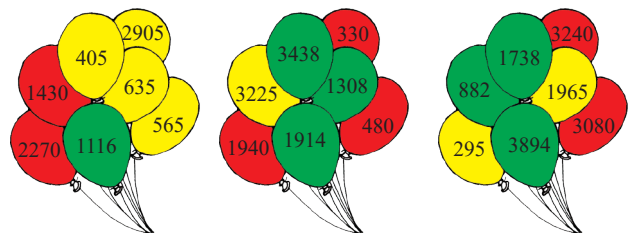
2. a. 21 and 36:
 $21 = 1 \times 21$; $21 = 3 \times 7$
 Factors of 21 are 1, 3, 7, and 21.
 $36 = 1 \times 36$; $36 = 2 \times 18$;
 $36 = 3 \times 12$; $36 = 4 \times 9$;
 $36 = 6 \times 6$
 Factors of 36 are 1, 2, 3, 4, 6, 9, 12, 18, and 36.
 Common factors of 21 and 36 are 1, and 3.
- b. Same as above.
 Common factors of 18 and 54 are 1, 2, 3, 6, 9, and 18
- c. Same as above.
 Common factor of 34 and 35 is 1.
- d. Same as above.
 Common factors of 15 and 25 are 1 and 5.
- e. Same as above.
 Common factors of 14 and 35 are 1 and 7.
- f. Same as above.
 Common factors of 56 and 64 are 1, 2, 4, and 8.
- g. Same as above.
 Common factors of 16 and 20 are 1, 2, and 4.
- h. Same as above.
 Common factors of 18 and 40 are 1 and 2.

Learning Logs

1. a. 33 is a multiple of 3 and 11.
 b. 72 is a multiple of 3, 4, and 6.
 c. 3 and 7 are factors of 21.
 d. 5 and 6 are factors of 30.
2. Multiples of 4 are 4, 8, 12, 16, 20, 24, 28, 32, 36, 40, 44, 48, 52, 56, 60, 64, 68, 72, 76, 80.
 Multiples of 6 are 6, 12, 18, 24, 30, 36, 42, 48, 54, 60, 66, 72, 78, 84.
 Multiples of 8 are 8, 16, 24, 32, 40, 48, 56, 64, 72, 80.
 First three common multiples of 4, 6, and 8 are 24, 48, and 72.

3. a. $15: 1 \times 15 = 15$; $3 \times 5 = 15$
 Thus, the factors of 15 are 1, 3, 5, and 15.
- b. $21: 1 \times 21 = 21$; $3 \times 7 = 21$
 Thus, the factors of 21 are 1, 3, 7, and 21.
- c. $48: 1 \times 48 = 48$; $2 \times 24 = 48$;
 $3 \times 16 = 48$; $4 \times 12 = 48$
 Thus, the factors of 48 are 1, 2, 3, 4, 12, 16, 24, and 48.
- d. $56: 1 \times 56 = 56$; $2 \times 28 = 56$;
 $4 \times 14 = 56$; $7 \times 8 = 56$
 Thus, the factors of 56 are 1, 2, 4, 7, 8, 14, 28, and 56.
4. a. Numbers that have 2 as a factor:
 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62 and 64.
- b. Numbers that have 5 as a factor:
 30, 35, 40, 45, 50, 55 and 60.
- c. Numbers that have 10 as a factor:
 30, 40, 50 and 60
- d. Numbers that have both 2 and 5 as factors:
 30, 40, 50 and 60
- e. Numbers that have both 5 and 10 as factors:
 30, 40, 50 and 60
- f. Numbers that have both 2 and 3 as factors:
 30, 36, 42, 48, 54 and 60
5. a. A number is multiple of 3 if it can be completely divided by 3.
 $246 \div 3 = 82$, remainder = 0
 Thus, 246 is a multiple of 3.
- b. A number has 5 as a factor if it can be completely divided by 5.
 $395 \div 5 = 79$, remainder = 0
 Thus, 5 is a factor of 395.

6.



Mental Maths

1. The smallest multiple of 15 = $15 \times 1 = 15$
 So, the correct answer is (c).
2. A number is a factor of another if it divides it exactly.

$$120 \div 30 = 4, \text{ remainder} = 0$$

Thus, 30 is a factor of 120.

So, the correct answer is (a).

3. Multiples of 7 between 35 and 56 are 42 and 49.

Odd multiples in this range is 49.

So, the correct answer is (b).

4. Factors of 36 are 1, 2, 3, 4, 6, 9, 12, 18, and 36.

Among the given options, 8 is not a factor of 36.

So, the correct answer is (a).

5. Every number can be divided exactly by 1.

Therefore, every number is a multiple of 1.

So, the correct answer is (a).

6. Every number greater than 1 has at least two factors: 1 and the number itself.

So, the correct answer is (c).

HOTS

1. Kavita goes for swimming in the interval of 4 days

Start date = 12th May

Sequence of dates when she goes for swimming
= 12, 16, 20, 24, 28

Hema goes for swimming in the interval of 3 days.

Start date = 12th May

Sequence of dates when she goes for swimming
= 12, 15, 18, 21, 24, 27, 30

2. Dates when both the friends swim = common dates in sequences i.e., 12th May and 24th May

3. Intervals of meetings = Least common multiple of 3 and 4 = 12

Therefore, after 12 days from 12th May, both meet again on 24th May.

Puzzle

Across:

1. The fourth multiple of 5 =
 $4 \times 5 = 20$.

2. The number present in the tables of both 7 and 9 = 63.

4. Four 100s make this number = 400.

1. 2	0		2. 6	3. 3
4				6
	4. 4	0	0	
	8	5. 1	0	0
6. 4			7. 2	
8. 1	0		9. 1	

5. The smallest 3-digit number with two equal factors = 100.

8. The smallest common multiple of 2 and 5 = 10

9. A factor of every number = 1

Down:

1. The second common multiple of 4 and 6 = 24.

3. The 6th multiple of 6 = $6 \times 6 = 36$.

4. The fourth multiple of 12 = $4 \times 12 = 48$.

6. 2nd multiple of number 2 = 4.

7. The third multiple of 7 = $3 \times 7 = 21$.

CHAPTER 6 : FRACTIONS

Warm Up

1. a. The bread is divided into two equal parts, each

part = $\frac{1}{2}$ of the bread

- b. The pizza is divided into three equal parts, each

part = $\frac{1}{3}$ of the pizza.

- c. The cake is divided into four equal parts, each

part = $\frac{1}{4}$ of the cake.

2. a. Circle is divided into 3 equal parts, 1 shaded

→ Fraction = $\frac{1}{3}$

- b. Square is divided into 4 equal parts, 2 shaded

→ Fraction = $\frac{2}{4}$

- c. Circle is divided into 4 equal parts, 2 shaded

→ Fraction = $\frac{2}{4}$

- d. Pentagon is divided into 2 equal parts, 1 shaded

→ Fraction = $\frac{1}{2}$

- e. Rectangle is divided into 4 equal parts, 2 shaded

→ Fraction = $\frac{2}{4}$

- f. Star is divided into 5 equal parts, 3 shaded

→ Fraction = $\frac{3}{5}$

- g. Hexagon is divided into 4 equal parts, 2 shaded

→ Fraction = $\frac{2}{4}$

- h. Rectangle is divided into 4 equal parts, 1 shaded

→ Fraction = $\frac{1}{4}$



- i. Heart is divided into 2 equal parts, 1 shaded
 $\rightarrow$ Fraction = $\frac{1}{2}$
- j. Square is divided into 4 equal parts, 2 shaded
 $\rightarrow$ Fraction = $\frac{2}{4}$
- k. Circle is divided into 3 equal parts, 2 shaded
 $\rightarrow$ Fraction = $\frac{2}{3}$
- l. Rectangle is divided into 4 equal parts, 2 shaded
 $\rightarrow$ Fraction = $\frac{2}{4}$

Exercise 6A

1. a. Total number of equal parts = 6

Number of shaded parts = 5

Fraction of shaded part

$$= \frac{\text{Number of shaded part}}{\text{Total number of equal parts}} = \frac{5}{6}$$

- b. Same as above. Fraction = $\frac{1}{3}$

- c. Same as above. Fraction = $\frac{2}{3}$

- d. Same as above. Fraction = $\frac{2}{8}$

- e. Same as above. Fraction = $\frac{3}{6}$

- f. Same as above. Fraction = $\frac{11}{32}$

- g. Same as above. Fraction = $\frac{2}{5}$

- h. Same as above. Fraction = $\frac{7}{25}$

2. a.



$\frac{1}{2}$

b.



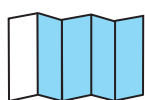
$\frac{5}{8}$

c.



$\frac{2}{4}$

d.



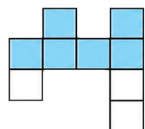
$\frac{4}{5}$

e.

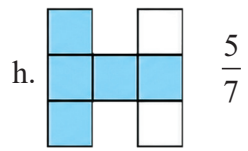


$\frac{3}{4}$

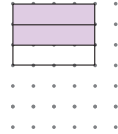
f.



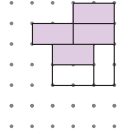
$\frac{6}{9}$



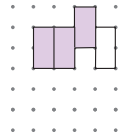
3. a.



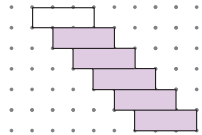
b.



c.



d.



4. a. One-sixth = $\frac{1}{6}$

- b. Three-tenths = $\frac{3}{10}$

- c. Four-sixths = $\frac{4}{6}$

- d. Seven-eighths = $\frac{7}{8}$

- e. Three-sevenths = $\frac{3}{7}$

- f. One-fourth = $\frac{1}{4}$

5. a. Two halves make a whole.

- b. Three thirds make a whole.

- c. There are four fourths in a whole.

- d. A whole can be divided into six sixths.

6. a. $\frac{5}{8}$: Numerator = 5, Denominator = 8

- b. $\frac{4}{7}$: Numerator = 4, Denominator = 7

- c. $\frac{2}{7}$: Numerator = 2, Denominator = 7

7. a. Numerator = 5, Denominator = 9,

$$\text{Fraction} = \frac{5}{9}$$

- b. Numerator = 4, Denominator = 7,

$$\text{Fraction} = \frac{4}{7}$$

- c. Numerator = 3, Denominator = 5,

$$\text{Fraction} = \frac{3}{5}$$

- d. Numerator = 7, Denominator = 11,

$$\text{Fraction} = \frac{7}{11}$$

- e. Numerator = 5, Denominator = 8,

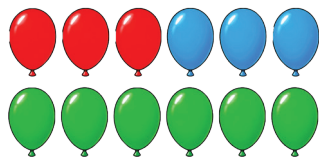
$$\text{Fraction} = \frac{5}{8}$$

Exercise 6B

1. a. $\frac{1}{4}$ of 12 balloons

$$\Rightarrow 12 \div 4 = 3;$$

$$1 \times 3 = 3$$



Thus, $\frac{1}{4}$ of 12 balloons = 3 balloons.

So, colour 3 balloons in red.

- b. $\frac{3}{6}$ of 12 balloons = $\frac{3}{6} \times 12$

$$\Rightarrow 3 \times 12 = 36; 36 \div 6 = 6$$

Thus, $\frac{3}{6}$ of 12 balloons = 6 balloons.

So, colour 6 balloons in green.

- c. $\frac{3}{12}$ of 12 balloons

$$\Rightarrow 3 \times 12 = 36; 36 \div 12 = 3$$

Thus, $\frac{3}{12}$ of 12 balloons = 3 balloons.

So, colour 3 balloons in blue.

2. a. $\frac{2}{3}$ of 27

$$\Rightarrow 27 \div 3 = 9; 2 \times 9 = 18$$

Thus, $\frac{2}{3}$ of 27 = 18.

- b. $\frac{5}{6}$ of 30

$$\Rightarrow 30 \div 6 = 5; 5 \times 5 = 25$$

Thus, $\frac{5}{6}$ of 30 = 25.

- c. $\frac{3}{8}$ of 24

$$\Rightarrow 24 \div 8 = 3; 3 \times 3 = 9$$

Thus, $\frac{3}{8}$ of 24 = 9.

- d. $\frac{2}{7}$ of 42

$$\Rightarrow 42 \div 7 = 6; 2 \times 6 = 12$$

Thus, $\frac{2}{7}$ of 42 = 12.

- e. $\frac{3}{4}$ of 72

$$\Rightarrow 72 \div 4 = 18; 3 \times 18 = 54$$

Thus, $\frac{3}{4}$ of 72 = 54.

- f. $\frac{2}{9}$ of 54

$$\Rightarrow 54 \div 9 = 6; 2 \times 6 = 12$$

Thus, $\frac{2}{9}$ of 54 = 12.

3. a. $\frac{1}{3}$ of 75 kg

$$\Rightarrow 75 \div 3 = 25; 1 \times 25 = 25$$

Thus, $\frac{1}{3}$ of 75 kg = 25 kg.

- b. $\frac{2}{5}$ of ₹110

$$\Rightarrow ₹110 \div 5 = ₹22; 2 \times ₹22 = ₹44$$

Thus, $\frac{2}{5}$ of ₹110 = ₹44.

- c. $\frac{3}{4}$ of a year

$$1 \text{ year} = 12 \text{ months}$$

$$\Rightarrow 12 \div 4 = 3; 3 \times 3 = 9$$

Thus, $\frac{3}{4}$ of a year = 9 months.

- d. $\frac{2}{3}$ of a dozen

$$1 \text{ dozen} = 12 \text{ units}$$

$$\Rightarrow 12 \div 3 = 4; 2 \times 4 = 8$$

Thus, $\frac{2}{3}$ of a dozen = 8.

- e. $\frac{3}{8}$ of 96 m

$$\Rightarrow 96 \div 8 = 12; 3 \times 12 = 36$$

Thus, $\frac{3}{8}$ of 96 m = 36 m.

- f. $\frac{3}{10}$ of 9 m

$$1 \text{ m} = 100 \text{ cm}$$

$$\Rightarrow 9 \text{ m} = 900 \text{ cm};$$

$$\Rightarrow 900 \div 10 = 90; 3 \times 90 = 270$$

Thus, $\frac{3}{10}$ of 9 m = 270 cm.

Exercise 6C

1. To solve these questions, carefully observe the figures that are of the same shape and size. Count the total number of equal parts in each whole, and then count how many parts are shaded.



The shapes and sizes in options b and c are the same. Both have one part shaded out of three equal parts. So, both represent one-third of the same whole.

2. Same as question 1.

Option (a), (e) and (b), (d).

3. Same as question 1.

Option (b) and (c).

4. a. $\frac{2}{5} = \frac{4}{10}$

b. $\frac{3}{7} = \frac{9}{21}$

c. $\frac{20}{28} = \frac{5}{7}$

d. $\frac{5}{10} = \frac{1}{2}$

5. a. $\frac{3}{5} = \frac{15}{25}$

b. $\frac{7}{8} = \frac{14}{16}$

c. $\frac{15}{35} = \frac{3}{7}$

d. $\frac{16}{36} = \frac{4}{9}$

6. To find equivalent fractions, multiply the numerator and denominator by the same number.

a. $\frac{5 \times 2}{7 \times 2} = \frac{10}{14}, \frac{5 \times 3}{7 \times 3} = \frac{15}{21}, \frac{5 \times 4}{7 \times 4} = \frac{20}{28}, \frac{5 \times 5}{7 \times 5} = \frac{25}{35},$
 $\frac{5 \times 6}{7 \times 6} = \frac{30}{42}$

Therefore, five equivalent fractions of $\frac{5}{7}$ are $\frac{10}{14}, \frac{15}{21}, \frac{20}{28}, \frac{25}{35}, \frac{30}{42}$

b. $\frac{3 \times 2}{4 \times 2} = \frac{6}{8}, \frac{3 \times 3}{4 \times 3} = \frac{9}{12}, \frac{3 \times 4}{4 \times 4} = \frac{12}{16}, \frac{3 \times 5}{4 \times 5} = \frac{15}{20},$
 $\frac{3 \times 6}{4 \times 6} = \frac{18}{24}$

Therefore, five equivalent fractions of $\frac{3}{4}$ are $\frac{6}{8}, \frac{9}{12}, \frac{12}{16}, \frac{15}{20}, \frac{18}{24}$

c. $\frac{5 \times 2}{8 \times 2} = \frac{10}{16}, \frac{5 \times 3}{8 \times 3} = \frac{15}{24}, \frac{5 \times 4}{8 \times 4} = \frac{20}{32},$
 $\frac{5 \times 5}{8 \times 5} = \frac{25}{40}, \frac{5 \times 6}{8 \times 6} = \frac{30}{48}$

Therefore, five equivalent fractions of $\frac{5}{8}$ are

$\frac{10}{16}, \frac{15}{24}, \frac{20}{32}, \frac{25}{40}, \frac{30}{48}$

d. $\frac{2 \times 2}{7 \times 2} = \frac{4}{14}, \frac{2 \times 3}{7 \times 3} = \frac{6}{21}, \frac{2 \times 4}{7 \times 4} = \frac{8}{28},$
 $\frac{2 \times 5}{7 \times 5} = \frac{10}{35}, \frac{2 \times 6}{7 \times 6} = \frac{12}{42}$

Therefore, five equivalent fractions of $\frac{2}{7}$ are

$\frac{4}{14}, \frac{6}{21}, \frac{8}{28}, \frac{10}{35}, \frac{12}{42}$

e. $\frac{8 \times 2}{3 \times 2} = \frac{16}{6}, \frac{8 \times 3}{3 \times 3} = \frac{24}{9}, \frac{8 \times 4}{3 \times 4} = \frac{32}{12},$
 $\frac{8 \times 5}{3 \times 5} = \frac{40}{15}, \frac{8 \times 6}{3 \times 6} = \frac{48}{18}$

Therefore, five equivalent fractions of $\frac{8}{3}$ are

$\frac{16}{6}, \frac{24}{9}, \frac{32}{12}, \frac{40}{15}, \frac{48}{18}$

7. a. We multiply 2 by 9 in order to make the denominator 18. So, we also multiply the numerator by 9. Thus, $\frac{1}{2} = \frac{1 \times 9}{2 \times 9} = \frac{9}{18}$

b. We multiply 3 by 6 in order to make the denominator 18. So, we also multiply the numerator by 6. Thus, $\frac{2}{3} = \frac{2 \times 6}{3 \times 6} = \frac{12}{18}$

c. We divide 108 by 6 in order to make the denominator 18. So, we also divide the numerator by 6. Thus, $\frac{36}{108} = \frac{36 \div 6}{108 \div 6} = \frac{6}{18}$

d. We multiply 3 by 6 in order to make the denominator 18. So, we also multiply the numerator by 6. Thus, $\frac{9}{3} = \frac{9 \times 6}{3 \times 6} = \frac{54}{18}$

e. We multiply 9 by 2 in order to make the denominator 18. So, we also multiply the numerator by 2. Thus, $\frac{5}{9} = \frac{5 \times 2}{9 \times 2} = \frac{10}{18}$

8. a. We multiply 2 by 10 in order to make the numerator 20. So, we also multiply the denominator by 10. Thus, $\frac{2}{9} = \frac{2 \times 10}{9 \times 10} = \frac{20}{90}$
- b. We multiply 4 by 5 in order to make the numerator 20. So, we also multiply the denominator by 5. Thus, $\frac{4}{5} = \frac{4 \times 5}{5 \times 5} = \frac{20}{25}$
- c. We multiply 5 by 4 in order to make the numerator 20. So, we also multiply the denominator by 4. Thus, $\frac{5}{8} = \frac{5 \times 4}{8 \times 4} = \frac{20}{32}$
- d. We multiply 10 by 2 in order to make the numerator 20. So, we also multiply the denominator by 2. Thus, $\frac{10}{7} = \frac{10 \times 2}{7 \times 2} = \frac{20}{14}$
- e. We divide 40 by 2 in order to make the numerator 20. So, we also divide the denominator by 2. Thus, $\frac{40}{18} = \frac{40 \div 2}{18 \div 2} = \frac{20}{9}$
9. a. We multiply 5 by 4 in order to make the denominator 20. So, we also multiply the numerator by 4. Thus, $\frac{2}{5} = \frac{2 \times 4}{5 \times 4} = \frac{8}{20}$
- b. We multiply 3 by 6 in order to make the denominator 18. So, we also multiply the numerator by 6. Thus, $\frac{3}{9} = \frac{3 \times 6}{9 \times 6} = \frac{18}{54}$
- c. We multiply 9 by 9 in order to make the denominator 81. So, we also multiply the numerator by 9. Thus, $\frac{5}{9} = \frac{5 \times 9}{9 \times 9} = \frac{45}{81}$
- d. We multiply 4 by 6 in order to make the denominator 24. So, we also multiply the numerator by 6. Thus, $\frac{4}{7} = \frac{4 \times 6}{7 \times 6} = \frac{24}{42}$
10. a. $\frac{5}{11} \times \frac{25}{22}$: Here, $5 \times 22 = 110$ and $11 \times 25 = 275$. Both products are different. Hence, $\frac{5}{11}$ and $\frac{25}{22}$ are not equivalent fractions.
- b. $\frac{8}{12} \times \frac{16}{21}$: Here, $8 \times 21 = 168$ and $12 \times 16 = 192$. Both products are different.

Hence, $\frac{8}{12}$ and $\frac{16}{21}$ are not equivalent fractions.

- c. $\frac{3}{8} \times \frac{18}{48}$: Here, $3 \times 48 = 144$ and $8 \times 18 = 144$.

Both products are equal.

Hence, $\frac{3}{8}$ and $\frac{18}{48}$ are equivalent fractions.

- d. $\frac{9}{10} \times \frac{27}{40}$: Here, $9 \times 40 = 360$ and

$10 \times 27 = 270$. Both products are not equal.

Hence, $\frac{9}{10}$ and $\frac{27}{40}$ are not equivalent fractions.

- e. $\frac{4}{5} \times \frac{36}{45}$: Here, $4 \times 45 = 225$ and

$5 \times 36 = 180$. Both products are not equal.

Hence $\frac{4}{5}$ and $\frac{36}{45}$ are not equivalent fractions.

Exercise 6D

- a. The numerator is 9, not 1. So, it is not a unit fraction.

b. The numerator is 1. So, it is a unit fraction.

c. The numerator is 4, not 1. So, it is not a unit fraction.

d. The numerator is 1. So, it is a unit fraction.

e. The numerator is 3, not 1. So, it is not a unit fraction.

f. The numerator is 1. So, it is a unit fraction.
- a. All the denominators are same, i.e. 7. So, these are like fractions.

b. All the denominators are same, i.e. 9. So, these are like fractions.

c. All the denominators are not same. So, these are not like fractions.

d. All the denominators are not same. So, these are not like fractions.

e. All the denominators are same, i.e. 13. So, these are like fractions.

f. All the denominators are not same. So, these are not like fractions.
- a. The denominators are 5, 8, and 9. All the denominators are different. So, these are unlike fractions.



- b. All the denominators are the same. So, these are not unlike fractions.
- c. All the denominators are different. So, these are unlike fractions.
- d. All the denominators are different. So, these are unlike fractions.
- e. All the denominators are different. So, these are unlike fractions.
- f. All the denominators are the same. So, these are not unlike fractions.
4. a. Both fractions have the same denominator, 5.
Since $4 > 1$, $\frac{4}{5}$ is greater.
- b. Both fractions have the same denominator, 13.
Since $9 > 7$, $\frac{9}{13}$ is greater.
- c. Both fractions have the same denominator, 16.
Since $8 > 3$, $\frac{8}{16}$ is greater.
- d. Both fractions have the same denominator, 9.
Since $2 > 1$, $\frac{2}{9}$ is greater.
- e. Both fractions have the same denominator, 20.
Since $8 > 7$, $\frac{8}{20}$ is greater.
5. a. $\frac{1}{3} \boxed{=} \frac{1}{3}$ b. $\frac{2}{9} \boxed{<} \frac{7}{9}$
- c. $\frac{10}{15} \boxed{>} \frac{8}{15}$ d. $\frac{8}{16} \boxed{>} \frac{1}{16}$
- e. $\frac{3}{9} \boxed{<} \frac{5}{9}$
6. a. Comparing the numerators of the given fractions, $2 < 4 < 5$.
So, $\frac{2}{8} < \frac{4}{8} < \frac{5}{8}$
The fractions in ascending order are $\frac{2}{8} < \frac{4}{8} < \frac{5}{8}$
- b. $1 < 2 < 6$. So, $\frac{1}{9} < \frac{2}{9} < \frac{6}{9}$.
The fractions in ascending order are $\frac{1}{9} < \frac{2}{9} < \frac{6}{9}$
- c. $1 < 5 < 8$. So, $\frac{1}{12} < \frac{5}{12} < \frac{8}{12}$.
The fractions in ascending order are $\frac{1}{12} < \frac{5}{12} < \frac{8}{12}$.

7. a. Comparing the numerator of the given fractions,
 $3 > 2 > 1$.
So, $\frac{3}{9} > \frac{2}{9} > \frac{1}{9}$.
The fractions in descending order are $\frac{3}{9} > \frac{2}{9} > \frac{1}{9}$
- b. $9 > 3 > 1$. So, $\frac{1}{3} = \frac{1 \times 6}{3 \times 6} = \frac{6}{18}$
The fractions in descending order are
 $\frac{9}{15} > \frac{3}{15} > \frac{1}{15}$.
- c. $7 > 4 > 3 > 1$. So, $\frac{7}{7} > \frac{4}{7} > \frac{3}{7} > \frac{1}{7}$
The fractions in descending order are
 $\frac{7}{7} > \frac{4}{7} > \frac{3}{7} > \frac{1}{7}$.

Exercise 6E

1. a. $\frac{9}{19} + \frac{8}{19} = \frac{9+8}{19} = \frac{17}{19}$
- b. $\frac{5}{15} + \frac{8}{15} = \frac{5+8}{15} = \frac{13}{15}$
- c. $\frac{2}{6} + \frac{4}{9} = \frac{2+4}{9} = \frac{6}{9} = \frac{6 \div 3}{9 \div 3} = \frac{2}{3}$
- d. $\frac{6}{12} + \frac{1}{12} = \frac{6+1}{12} = \frac{7}{12}$
- e. $\frac{10}{18} + \frac{5}{18} = \frac{10+5}{18} = \frac{15}{18} = \frac{15 \div 3}{18 \div 3} = \frac{5}{6}$
- f. $\frac{4}{27} + \frac{5}{27} + \frac{2}{27} = \frac{4+5+2}{27} = \frac{11}{27}$
- g. $\frac{8}{20} + \frac{3}{20} + \frac{7}{20} = \frac{8+3+7}{20} = \frac{18}{20} = \frac{18 \div 2}{20 \div 2} = \frac{9}{10}$
- h. $\frac{1}{16} + \frac{3}{16} + \frac{5}{16} = \frac{1+3+5}{16} = \frac{9}{16}$
2. a. $\frac{10}{11} - \frac{7}{11} = \frac{10-7}{11} = \frac{3}{11}$
- b. $\frac{6}{8} - \frac{3}{8} = \frac{6-3}{8} = \frac{3}{8}$
- c. $\frac{9}{13} - \frac{9}{13} = \frac{9-9}{13} = \frac{0}{13} = 0$
- d. $\frac{5}{16} - \frac{3}{16} = \frac{5-3}{16} = \frac{2}{16} = \frac{2 \div 2}{16 \div 2} = \frac{1}{8}$

$$e. \frac{9}{17} - \frac{7}{17} = \frac{9-7}{17} = \frac{2}{17}$$

$$f. \frac{4}{11} - \frac{1}{11} = \frac{4-1}{11} = \frac{3}{11}$$

$$g. \frac{6}{18} - \frac{4}{18} = \frac{6-4}{18} = \frac{2}{18} = \frac{2 \div 2}{18 \div 2} = \frac{1}{9}$$

$$h. \frac{8}{9} - \frac{4}{9} = \frac{8-4}{9} = \frac{4}{9}$$

3. a. Quantity of juice already in the jug = $\frac{1}{4}$

$$\text{Quantity of juice filled later} = \frac{2}{4}$$

Fraction of the jug filled now

$$= \frac{1}{4} + \frac{2}{4} = \frac{1+2}{4} = \frac{3}{4}$$

Thus, $\frac{3}{4}$ of the jug is filled now.

- b. Length of red ribbon = $\frac{3}{4}$ m

$$\text{Length of pink ribbon} = \frac{1}{4} \text{ m}$$

$$\text{Total length of ribbons} = \frac{1}{4} + \frac{3}{4} = \frac{1+3}{4} = \frac{4}{4} = 1 \text{ m}$$

Thus, the total length of both ribbons is 1 m.

- c. Distance travelled by bus = $\frac{5}{8}$ km

$$\text{Distance travelled by foot} = \frac{2}{8} \text{ km}$$

Total distance covered by Ram

$$= \frac{5}{8} + \frac{2}{8} = \frac{5+2}{8} = \frac{7}{8}$$

Thus, Ram covers $\frac{7}{8}$ km in all.

- d. Time spent by Geeta on reading a book

$$= \frac{7}{12} \text{ hour}$$

Time spent by her on playing video games

$$= \frac{4}{12} \text{ hour}$$

Total time spent on both activities

$$= \frac{7}{12} + \frac{4}{12} = \frac{7+4}{12} = \frac{11}{12} \text{ hour}$$

Thus, Geeta spends $\frac{11}{12}$ hour on both activities.

- e. Distance jumped by Neelima = $\frac{6}{8}$ m

$$\text{Distance jumped by Ridhima} = \frac{5}{8} \text{ m}$$

$$\text{Since } 6 > 5, \frac{6}{8} > \frac{5}{8}$$

Difference between the distances

$$= \frac{6}{8} - \frac{5}{8} = \frac{6-5}{8} = \frac{1}{8} \text{ m}$$

Thus, Neelima jumped a greater distance by $\frac{1}{8}$ m.

- f. The sides of a triangle are

$$\frac{3}{12} \text{ m}, \frac{4}{12} \text{ m}, \text{ and } \frac{5}{12} \text{ m}$$

Total length of all three sides

$$= \frac{3}{12} + \frac{4}{12} + \frac{5}{12} = \frac{3+4+5}{12} = \frac{12}{12} = 1$$

Thus, the total length of all three sides is 1 m.

Learning Logs

- a. Since the denominators of all the fractions are same, the fractions are like fractions.
b. The denominators of all the fractions are not same, the fractions are unlike fractions.
c. The denominators of all the fractions are not same, the fractions are unlike fractions.
d. Since the denominators of all the fractions are same, the fractions are like fractions.

2. a. $\frac{3}{4} = \frac{9}{\square}$

We multiply 3 by 3 in order to make the numerator 9. So, we also multiply the denominator by 3. Thus, $\frac{3}{4} = \frac{3 \times 3}{4 \times 3} = \frac{9}{12}$

b. $\frac{\square}{5} = \frac{8}{20}$

We divide 20 by 4 in order to make the denominator 5. So, we also divide the numerator by 4. Thus, $\frac{8}{20} = \frac{8 \div 4}{20 \div 4} = \frac{2}{5}$.



c. Same as part (a)

d. Same as part (a)

3. When the denominators are the same, the fraction with the greater numerator is greater.

a. $\frac{1}{6} \boxed{<} \frac{3}{6}$

b. $\frac{4}{13} \boxed{>} \frac{1}{13}$

c. $\frac{5}{12} \boxed{>} \frac{2}{12}$

d. $\frac{7}{15} \boxed{<} \frac{13}{15}$

4. a. Comparing the numerators of the given fractions, $1 < 2 < 3 < 7$.

The fractions in ascending order are

$$\frac{1}{15} < \frac{2}{15} < \frac{3}{15} < \frac{7}{15}.$$

- b. Same as above.

The fractions in ascending order are

$$\frac{1}{4} < \frac{3}{4} < \frac{5}{4} < \frac{7}{4}.$$

- c. Same as above.

The fractions in ascending order are

$$\frac{2}{9} < \frac{3}{9} < \frac{4}{9} < \frac{5}{9}.$$

5. a. Comparing the numerators of the given fractions, $6 > 5 > 3 > 1$.

The fractions in descending order are

$$\frac{6}{10} > \frac{5}{10} > \frac{3}{10} > \frac{1}{10}.$$

- b. Same as above.

The fractions in descending order are

$$\frac{8}{15} > \frac{6}{15} > \frac{4}{15} > \frac{3}{15}.$$

- c. Same as above.

The fractions in descending order are

$$\frac{5}{21} > \frac{4}{21} > \frac{3}{21} > \frac{2}{21}.$$

6. a. $\frac{5}{19} + \frac{9}{19} + \frac{4}{19} = \frac{5+9+4}{19} = \frac{18}{19}$

b. $\frac{6}{18} + \frac{7}{18} + \frac{5}{18} = \frac{6+7+5}{18} = \frac{18}{18} = 1$

c. $\frac{15}{32} + \frac{9}{32} + \frac{5}{32} = \frac{15+9+5}{32} = \frac{29}{32}$

d. $\frac{2}{18} + \frac{3}{18} + \frac{5}{18} = \frac{2+3+5}{18} = \frac{10}{18} = \frac{10 \div 2}{18 \div 2} = \frac{5}{9}$

7. a. $\frac{5}{11} - \frac{2}{11} = \frac{5-2}{11} = \frac{3}{11}$

b. $\frac{9}{15} - \frac{3}{15} = \frac{9-3}{15} = \frac{6}{15} = \frac{6 \div 3}{15 \div 3} = \frac{2}{5}$

c. $\frac{8}{9} - \frac{2}{9} = \frac{8-2}{9} = \frac{6}{9} = \frac{6 \div 3}{9 \div 3} = \frac{2}{3}$

d. $\frac{6}{5} - \frac{2}{5} = \frac{6-2}{5} = \frac{4}{5}$

8. a. Length of thread used by tailor = $\frac{2}{6}$ m

Length of thread left in the reel = $\frac{1}{6}$ m

Total length of thread

$$= \frac{2}{6} \text{ m} + \frac{1}{6} \text{ m} = \frac{2+1}{6} \text{ m} = \frac{3}{6} \text{ m} = \frac{3 \div 3}{6 \div 3} \text{ m} = \frac{1}{2} \text{ m}$$

Thus, the total length of the thread in the new reel is $\frac{1}{2}$ m.

HOTS

Since all the fractions have the same numerator, the fraction with the greater denominator is the smaller fraction.

1. Fat: Food B = $\frac{1}{12}$, Food C = $\frac{1}{6}$, Food A = $\frac{1}{3}$

Ascending order: $\frac{1}{12}, \frac{1}{6}, \frac{1}{3}$

Arrangement of fats in ascending order:

Food B, Food C, Food A.

2. Protein: Food C = $\frac{1}{12}$, Food B = $\frac{1}{4}$, Food A = $\frac{1}{3}$

Ascending order: $\frac{1}{12}, \frac{1}{4}, \frac{1}{3}$

Arrangement of protein in ascending order:

Food C, Food B, Food A.

3. Sugar: Food B = $\frac{1}{6}$, Food A = $\frac{1}{4}$, Food C = $\frac{1}{3}$

Ascending order: $\frac{1}{6}, \frac{1}{4}, \frac{1}{3}$

Arrangement of Sugar in ascending order:

Food B, Food A, Food C.

MODEL TEST PAPER 1

4. Calcium: Food C = $\frac{1}{12}$, Food A = $\frac{1}{6}$, Food B = $\frac{1}{3}$

Ascending order: $\frac{1}{12}, \frac{1}{6}, \frac{1}{3}$

Arrangement of calcium in ascending order:
Food C, Food A, Food B.

5. Vitamin: Food A = $\frac{1}{12}$, Food C = $\frac{1}{6}$, Food B = $\frac{1}{3}$

Ascending order: $\frac{1}{12}, \frac{1}{6}, \frac{1}{3}$

Arrangement of vitamin in ascending order:
Food A, Food C, Food B.

I would like to eat Food B because it Food B has the least amount of fat, less amount of sugar than Food A and Food C, and a good amount of calcium and vitamins. So, Food B is good for health.

Mental Maths

1. Total caps in the bag = 72

Number of white caps = 18

Number of red caps = $72 - 18 = 54$

Fraction of red caps = $\frac{54}{72} = \frac{54 \div 18}{72 \div 18} = \frac{3}{4}$

Thus, the correct answer is (c).

2. $\frac{2}{5} = \frac{2 \times 2}{5 \times 2} = \frac{4}{10}$, $\frac{2}{5} = \frac{2 \times 3}{5 \times 3} = \frac{6}{15}$, $\frac{2}{5} = \frac{2 \times 4}{5 \times 4} = \frac{8}{20}$

Thus, the correct answer is (c).

3. a. $\frac{8}{64} = \frac{8 \div 8}{64 \div 8} = \frac{1}{8}$

b. $\frac{3}{24} = \frac{3 \div 3}{24 \div 3} = \frac{1}{8}$

c. $\frac{6}{48} = \frac{6 \div 6}{48 \div 6} = \frac{1}{8}$

d. $\frac{4}{24} = \frac{4 \div 4}{24 \div 4} = \frac{1}{6}$

So, $\frac{4}{24}$ is not equivalent to $\frac{1}{8}$.

Thus, the correct answer is (d).

4. $\frac{1}{3} = \frac{1 \times 6}{3 \times 6} = \frac{6}{18}$

Thus, the correct answer is (a).

1. Place value of 7 in 72,563 is 70,000.

Thus, the correct answer is (a).

2. Expanded form of 49,631 =

$40,000 + 9,000 + 600 + 30 + 1$

Thus, the correct answer is (a).

3. The face value of a digit is the digit itself.

So, the face value of 3 in 53,219 is 3.

Thus, the correct answer is (a).

4. Place value of 6 in 86,472 = 6,000

Face value of 6 in 86,472 = 6

Difference = $6,000 - 6 = 5,994$.

Thus, the correct answer is (c).

5. Factors of 24 = 1, 2, 3, 4, 6, 8, 12, and 24.

Thus, the correct options is (b).

6. $\frac{1}{8}$ of 808 = $808 \div 8 = 101$

Thus, the correct answer is (b).

7. $5,124 \div 8 = 640$ and remainder is 4

Thus, the correct answer is (d).

8. 44 is not divisible by 7.

Thus, the correct answer is (d).

9. Multiples of 8 = 8, 16, 24, 32, 40, 48, 56, 64, 72, 80

Multiples of 12 = 12, 24, 36, 48, 60, 72, 84, 96, 108, 120

Common multiples of 8 and 12 are 24, 48, 72, 96, ...

Thus, the correct answer is (c).

10. Total number of students = 36

Total number of absent students = 4

Number of present students = $36 - 4 = 32$.

Fraction of present students = $\frac{32}{36} = \frac{32 \div 4}{36 \div 4} = \frac{8}{9}$

Thus, the correct answer is (b).

11. a. $43,648 + 32,764 = 76,412$

b. $56,436 - 27,398 = 29,038$

c. $4,364 + 2,136 - 3,006 = 3,494$

d. $5,364 + 8,736 - 7,196 = 6,904$

12. a. $316 \times 25 = 7,900$

b. $234 \times 261 = 61,074$



c. $632 \times 100 = 63,200$

d. $496 \times 60 = 29,760$

13. a. $5123 \div 5$:

So, $Q = 343$, $R = 3$.

Checking:

Quotient $\times$ Divisor

+ Remainder = Dividend

$1024 \times 5 + 3 = 5123$

$\Rightarrow 5120 + 3 = 5123$

$\Rightarrow 5123 = 5123$

Therefore, the division is correct.

b. Same as above.

$3,841 \div 21$:

$Q = 182$ and remainder = 19

c. Same as above.

$56,321 \div 10$:

Quotient = 5632 and remainder = 1

d. $18,264 \div 100$:

Quotient = 182 and remainder = 64.

14. a. $60,666 = 60,000 + 600 + 60 + 6$ (iii)

b. $52,892$ = The ten thousand digit is 5 (i)

c. $32,694$ = Place value of 3 is 30,000 (ii)

d. $99,999$ = Greatest 5-digit number (vi)

e. $5,000 + 600 + 7 = 5607$ (iv)

f. Sixty-nine thousand six = 69,006 (vii)

g. The smallest 5-digit number with three different digits = 10,002 (v)

15. a. Since, $54 \div 6 = 9$ and remainder = 0

So, 6 is a factor of 54.

b. A multiple of a number is obtained by multiplying that number by 1, 2, 3, and so on. 1 is not a multiple of every number.

c. The smallest 3-digit number is 100. The next number is 101, is odd.

16. a. The factors of 72 are the numbers that divides 72 exactly.

$72 = 1 \times 72$;

$72 = 2 \times 36$;

$72 = 3 \times 24$;

$72 = 4 \times 18$;

$72 = 6 \times 12$;

$72 = 8 \times 9$.

Thus, the factors of 72 are 1, 2, 3, 4, 6, 8, 9, 12, 18, 24, 36, and 72.

b. Tenth multiple of 2 = $2 \times 10 = 20$

Fifth multiple of 8 = $8 \times 5 = 40$

Product of 20 and 40 = $20 \times 40 = 800$.

c. Multiples of 15 are 15, 30, 45, 60, 75, 90

Three multiples of 15 between 30 and 80 are: 45, 60, and 75.

d. 5th multiple of 9 = $9 \times 5 = 45$

7th multiple of 6 = $6 \times 7 = 42$

Their sum = $45 + 42 = 87$

17. a. $\frac{6}{7} = \frac{6 \times 3}{7 \times 3} = \frac{18}{21} = \frac{6 \times 5}{7 \times 5} = \frac{30}{35} = \frac{6 \times 7}{7 \times 7} = \frac{42}{49}$

b. $\frac{2}{5} = \frac{2 \times 5}{5 \times 5} = \frac{10}{25} = \frac{2 \times 7}{5 \times 7} = \frac{14}{35} = \frac{2 \times 8}{5 \times 8} = \frac{16}{40}$

18. a. $\frac{1}{7} \times \frac{3}{7} = \frac{3}{49}$; $1 \times 7 = 7$, $3 \times 7 = 21$

Since, $7 < 21$, $\frac{1}{7} < \frac{3}{7}$

b. Same as above.

$\frac{5}{8} > \frac{3}{8}$

c. Same as above.

$\frac{7}{9} > \frac{5}{9}$

d. Same as above.

$\frac{5}{11} > \frac{1}{11}$

19. a. $\frac{1}{6} + \frac{2}{6} + \frac{3}{6} = \frac{1+2+3}{6} = \frac{6}{6} = 1$

b. $\frac{5}{9} - \frac{2}{9} = \frac{5-2}{9} = \frac{3}{9} = \frac{3 \div 3}{9 \div 3} = \frac{1}{3}$

c. $\frac{3}{4} + \frac{1}{4} - \frac{2}{4} = \frac{3+1-2}{4} = \frac{2}{4} = \frac{2 \div 2}{4 \div 2} = \frac{1}{2}$

20. a. Audience in the stadium = 57,688

Total number of men = 28,455

Total number of women = 18,610

Total men and women = $28,455 + 18,610 = 10,623$

Therefore, number of children

= $57,688 - 10,623 = 47,065$.

b. Cost of one shirt = ₹855

Number of shirt = 18

Total earning = $18 \times ₹855 = ₹15,390$.

c. Total prize money = ₹6,644

Number of players = 11

Each player's share = ₹6644 ÷ 11 = ₹604.

Thus, each player gets ₹604.

CHAPTER 7: GEOMETRY

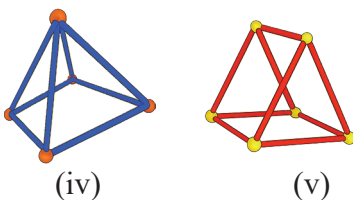
Warm Up

1. A solid with 1 curved face, 1 flat face and 1 corner is a cone, party hat.
2. A solid with 2 flat faces, one curved face and 2 edges is a cylinder, Candle, cake.
3. A solid with 12 edges and equal opposite faces is a cuboid, Milkcake.
4. A solid with 1 face and no corners is a sphere, gulab jamun.
5. A solid with 8 corners and 6 equal faces is a cube, gift box.
6. A solid with 1 flat face, curved face and no corner is a hemisphere, bowl.

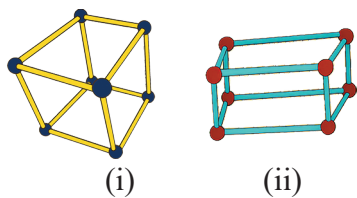
Exercise 7A

1. Cone, Cube, Cuboid, Cylinder, and Sphere

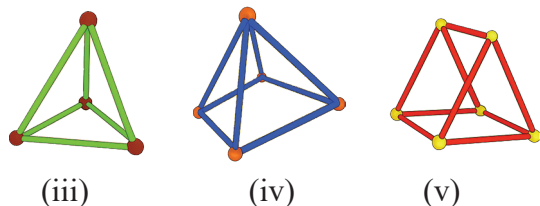
2. a. 5 flat faces:



- b. 8 vertices:



- c. Less than 10 edges:

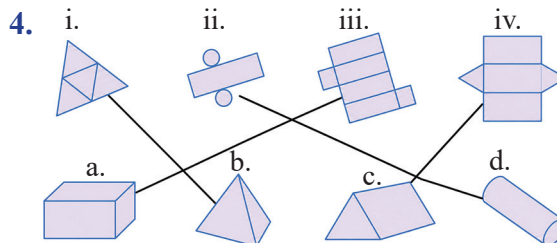


3.

Name of shape	Number of faces	Number of plane faces	Number of curved faces	Number of edges	Number of vertices
a. Cube	6	6	0	12	8
b. Cuboid	6	6	0	12	8

- c.

	Cylinder	Cone	Sphere	Hemisphere
3	2	1	2	0
2	1	1	1	1
1	0	1	0	0
2	1	1	1	0



7. a. Number of cubes in first level (Bottom level) = 12

Number of cubes in second level = 6

Number of cubes in third level = 3

Number of cube in top level = 1

Total number of cubes in the model

$$= 12 + 6 + 3 + 1 = 22$$

- b. Number of cubes in first level (Bottom level) = 16

Number of cubes in second level = 9

Number of cubes in third level = 4

Number of cube in top level = 1

Total number of cubes in the model

$$= 16 + 9 + 4 + 1 = 30$$

- c. Number of cubes in first level (Bottom level) = 21

Number of cubes in second level = 17

Number of cubes in third level = 13

Number of cubes in fourth level = 9

Number of cubes in fifth level = 5

Number of cubes in top level = 1

Total number of cubes in the model = 21 + 17

$$+ 13 + 9 + 5 + 1 = 66$$

Exercise 7B

1. a. Point P

b. Line, $\overline{ST}$

c. Ray, $\overrightarrow{CD}$

d. Line segment, $\overline{UV}$ or $\overline{VU}$

2. a. Total number of line segments in a rectangle = 4

b. Number of line segments in a triangle = 3

c. Number of line segments in a pentagon = 5

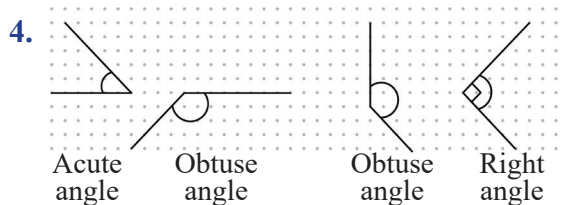
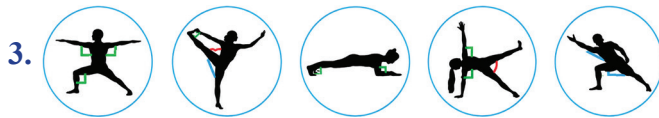


d. Number of line segments in circle = 0

3. a. $\overline{OA}$, $\overline{OB}$, $\overline{OC}$, $\overline{OD}$
 b. $\overline{OP}$, $\overline{OQ}$, $\overline{OR}$, $\overline{OS}$, $\overline{OT}$, $\overline{OU}$, $\overline{OV}$, $\overline{OW}$
 c. $\overline{PA}$, $\overline{PB}$, $\overline{PH}$, $\overline{CH}$, $\overline{CE}$, $\overline{DF}$, $\overline{PG}$, $\overline{DG}$

Exercise 7C

1. A right angle is an angle that measures exactly 90° .
 We can find right angles in many everyday objects.
 (i) Book – The corners of a book form right angle.
 (ii) Window – The corners of a window frame form right angle.
 (iii) Door – The edges and corners of a door form right angles.
 (iv) Table – The top surface and edges form right angles.
2. a. Right angles b. Acute angles
 c. Acute angle d. Right angle
 e. Obtuse angle



Exercise 7D

1. a. There are five sides.
 b. There are four sides.
 c. There are ten sides.
2. a. b.
 c. e.
3. a. The given polygon has four sides, it is a quadrilateral with sides AB, BC, CD, and DA.
 b. The given polygon has three sides, it is a

triangle with sides XY, YZ, and ZX.

- c. The given polygon has four sides, it is a quadrilateral with sides MN, NO, OP, and PM.
 d. The given polygon has five sides, it is a pentagon with sides AB, BC, CD, DE, and EA.
5. a. True: A square has all properties of rectangles.
 b. False: All squares are rectangles, but all rectangles are not squares.
 c. False: A polygon has three or more sides.
 d. True: A square has four corners(vertices).
 e. False: A quadrilateral has four sides, but all quadrilaterals are not rectangles.
6. • Outer triangles: 4 triangles (formed by the outer diamond corners and the square sides).
 • Small inner triangles: 4 triangles (The four small regions created inside the square by the intersecting diagonals)
 • Large inner triangles: 4 triangles (formed by combining pairs of adjacent inner triangles along the diagonals).

Total number of triangles = $4 + 4 + 4 = 12$.

No, spider cannot start point A and come back to the same point without walking on any wall more than once. Because, there are intersections with an odd number of walls, it is mathematically impossible for the spider to trace the entire web without repeating a path.

Exercise 7E

1. a. Centre: O
 b. Radius: OE, OF, and OG
 c. Diameter: EF
2. OA represents the radius of the circle.
3. AB represents the diameter of the circle.
5. a. Diameter = 6 cm

$$\text{Radius} = \frac{\text{Diameter}}{2} = \frac{6}{2} = 3 \text{ cm}$$

- b. Diameter = 20 cm

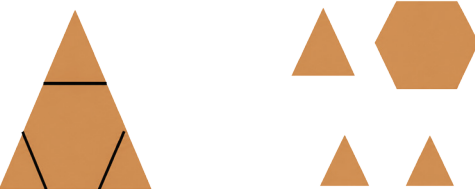
$$\text{Radius} = \frac{\text{Diameter}}{2} = \frac{20}{2} = 10 \text{ cm}$$

- c. Diameter = 14 cm

$$\text{Radius} = \frac{\text{Diameter}}{2} = \frac{14}{2} = 7 \text{ cm}$$

6. a. Radius = 1 cm
Diameter = $2 \times \text{Radius} = 2 \times 1 = 2 \text{ cm}$
- b. Radius = 24 cm
Diameter = $2 \times \text{Radius} = 2 \times 24 = 48 \text{ cm}$
- c. Radius = 30 cm
Diameter = $2 \times \text{Radius} = 2 \times 30 = 60 \text{ cm}$
7. a. Right angle
b. Acute angle
c. Obtuse angle
d. Acute angle
8. a. False: A circle is not a polygon because it has no straight lines.
b. True: All radii of a circle are equal.
c. True: All diameters of a circle are equal in length.
d. False: A circle has infinitely many diameters.
e. True: A circle has only one centre point.
f. True: Radius = half of diameter.

Learning Logs

1. a. Five points: A, B, D, E, and F.
b. Line: $\overleftrightarrow{BF}$
c. Four rays: $\overrightarrow{OA}$, $\overrightarrow{OB}$, $\overrightarrow{OD}$, $\overrightarrow{OF}$
d. Five line segments: $\overline{OA}$, $\overline{OB}$, $\overline{OD}$, $\overline{OF}$, $\overline{EB}$
3. a. 
- b. 
- c. 
4. a. O is the centre.
b. OB is the radius.
c. OC is the radius.

d. CD is the diameter.

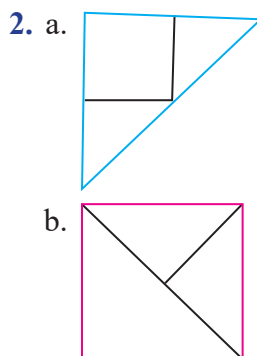
5. c is the correct net of cuboid.

Mental Maths

1. There are 8 line segments in the given figure.
So, the correct answer is (d).
2. There are six rectangles in the given figure.
So, the correct answer is (d).
3. Vertex is not a part of circle.
So, the correct answer is (d).
4. A solid with no vertex is a hemisphere.
So, the correct answer is (c).
5. Two cubes of the same size put together form a cuboid.
So, the correct answer is (b).
6. Point is the smallest shape in geometry.
So, the correct answer is (b).

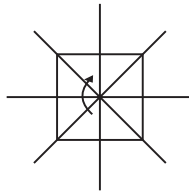
HOTS

1. Cylinder, Circle, Triangle, Square, and Rectangle.



CHAPTER 8: SYMMETRY AND PATTERNS

Warm Up

1. No
2. 0
3. 1, 2, 3, 6
4. 



There are four lines of symmetry.

5. 4, 5, 7, 8, 9, 10

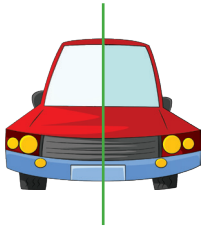
Exercise 8A

1. a.



b. non-symmetrical

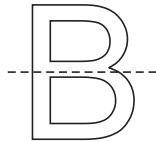
c.



d.

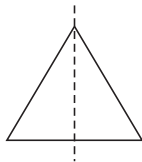


2. a. The dotted line does not divide the given figure into two equal parts, so the line is not a line of symmetry.



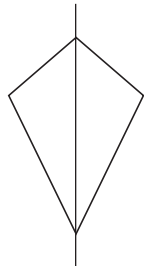
b. Same as above.

c. The dotted line divides the given figure into two equal parts, so the line represents a line of symmetry.



d. Same as part a.

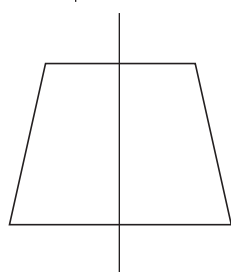
3. a.



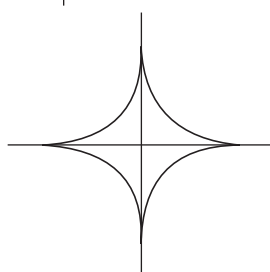
b.



c.



d.

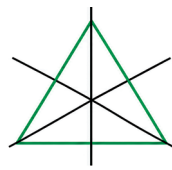
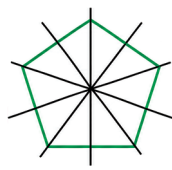
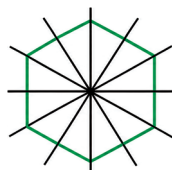
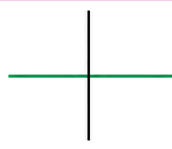
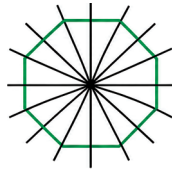


4. Letters with one line of symmetry: A, B, C, D, E, K, M, T, U, V, W, Y

Two lines of symmetry: H, I, O, X

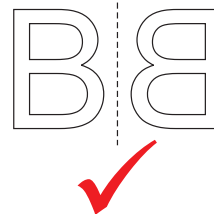
No line of symmetry: F, G, J, L, N, P, Q, R, S, Z

4.

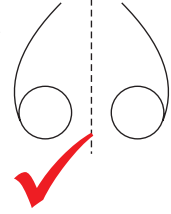
Geometrical shape	Number of lines of symmetry
	3
	5
	6
	1
	8

Exercise 8B

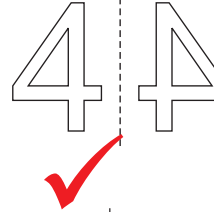
1. a.



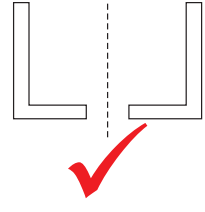
b.



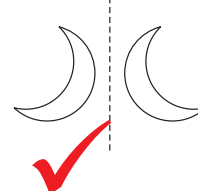
c.



d.

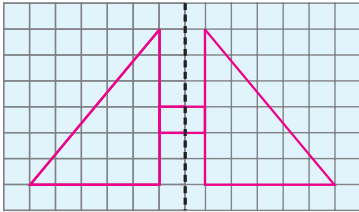
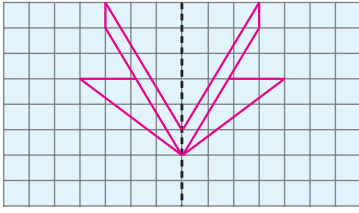
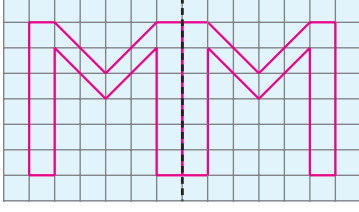
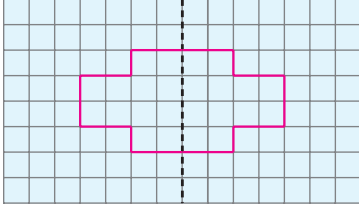


e.



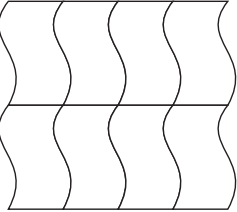
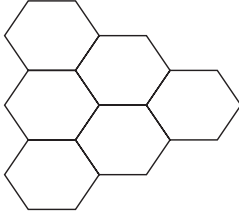
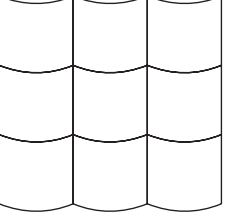
f. Figures are not reflection of each other

2. CAP | ԳԱՇ
NOON | ՈՈՈՈ
TOP | ԳՕԾ
8008 | 8008
6379 | ԵՇԷԹ
3. ՄԱԴ | FAN
ՄԷՆ | HEN
ՈՅԵ
MORE

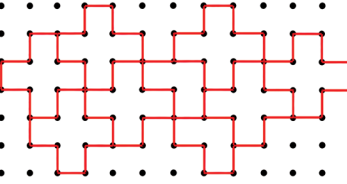
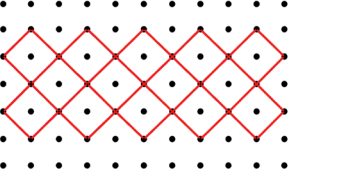
4. a. 
- b. 
- c. 
- d. 

Exercise 8C

2. A tessellation is a tiling pattern in which shapes fit together completely without leaving any gaps or overlapping.

- a.  
- e.  
- f.  

(b), (c), (d) are not the pattern that tessellate.

3. a. 
- b. 

Exercise 8D

1. a. The numbers are increasing by 3 each time.
 $1 + 3 = 4$; $4 + 3 = 7$; $7 + 3 = 10$; $10 + 3 = 13$;
 $13 + 3 = 16$; $16 + 3 = 19$; $19 + 3 = 22$;
 $22 + 3 = 25$.
 So, the pattern is 1, 4, 7, 10, 13, 16, 19, 22, 25.
- b. The numbers are divided by 2 each time.
 $512 \div 2 = 256$; $256 \div 2 = 128$; $128 \div 2 = 64$;
 $64 \div 2 = 32$; $32 \div 2 = 16$; $16 \div 2 = 8$.
 So, the pattern is 512, 256, 128, 64, 32, 16, 8.
2. a. In the circle, the number opposite to each number is multiplied by 3.
 $7 \times 3 = 21$; $5 \times 3 = 15$; $3 \times 3 = 9$; $8 \times 3 = 24$.
 So, the missing number is 24.
- b. In the figure, each number opposite to another number follows the rule of multiplication by 4.
 $9 \times 4 = 36$; $12 \times 4 = 48$; $8 \times 4 = 32$; $5 \times 4 = 20$.
 So, the missing number is 20.

- c. In the circle, each inside number is the sum of the two outside numbers near it.

$$7 + 2 = 9; 5 + 13 = 18; 22 + 15 = 37;$$

$$19 + 11 = 30$$

So, the missing number is 30.

3. a. The number before multiplication is increasing as 1, 12, 123, 1234, 12345. The number added is also increasing as 1, 2, 3, 4, 5. The next digit in the number is decreasing in order as 9, 98, 987, 9876, 98765.

So, the next two steps are

$$1234 \times 8 + 4 = 9876$$

$$12345 \times 8 + 5 = 98765$$

- b. The number before multiplication is increasing as 0, 1, 12, 123, 1234. The number added is increasing as 1, 2, 3, 4, 5. The answer has repeated digit 1.

So, the next two steps are

$$123 \times 9 + 4 = 1111$$

$$1234 \times 9 + 5 = 11111$$

- c. The number before multiplication is increasing as 0, 9, 98, 987, 9876. The number added is decreasing as 8, 7, 6, 5, 4. The answer has repeated digit 8.

So, the next two steps are

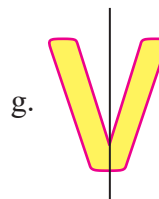
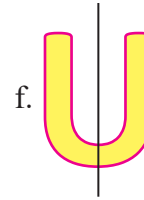
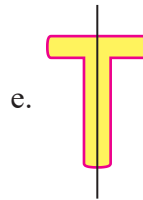
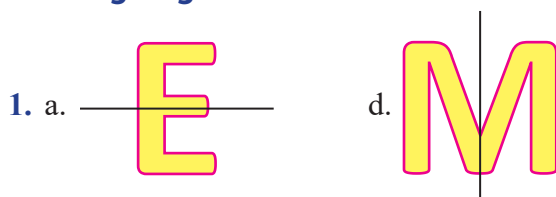
$$987 \times 9 + 5 = 8888$$

$$9876 \times 9 + 4 = 88888$$

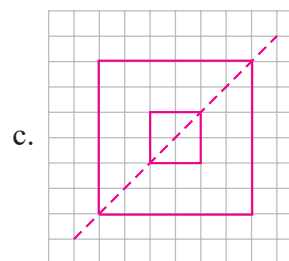
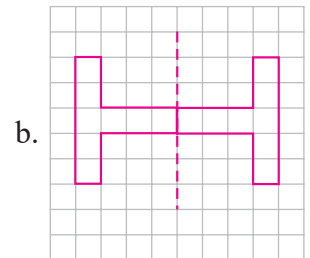
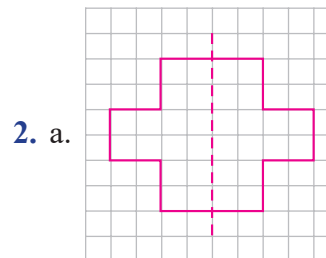
4. a. $37 \times 3 \times 1 = 111$
 $37 \times 3 \times 2 = 222$
 $37 \times 3 \times 3 = \underline{333}$
 $37 \times 3 \times 4 = 444$
 $37 \times 3 \times \underline{5} = 555$

- b. $5 \times 5 = 25$
 $55 \times 5 = 275$
 $\underline{555} \times 5 = 2775$
 $5555 \times \underline{5} = 27775$
 $55555 \times 5 = \underline{277775}$

Learning Logs



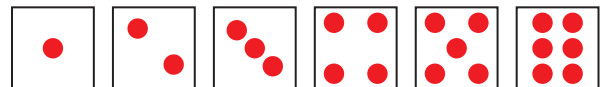
(b) and (c) part letters are non-symmetrical



3. A shape can tile a floor if it fits with the same shape without leaving any gaps or overlapping.

The shape  in option (a) can fit into each other and form a tiling pattern.

4. a. The number of dots is increasing by 1 each time.



- b. The letters are written by skipping one letter each time.



- c. The letters are in order A, B, C, D, E, F.

The numbers are increasing by 2 each time.



5. a. $8 + 1 = 9$

$80 + 10 = 90$

$800 + 100 = 900$

Each number is increasing by adding one zero.

So, the next two steps are

$8000 + 1000 = 9000$

$80000 + 10000 = 90000$

b. $6 \times 6 = 36$

$66 \times 6 = 396$

$666 \times 6 = 3996$

The number 6 is increasing by one digit each time. The answer has 3 at the beginning, followed by 9s, and ends with 6.

So, the next two steps are

$6666 \times 6 = 39996$

$66666 \times 6 = 399996$

c. $24 \div 8 = 3$

$240 \div 8 = 30$

$2400 \div 8 = 300$

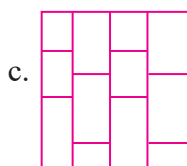
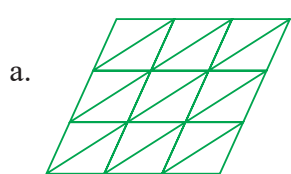
Each dividend is increasing by adding one zero. So, the quotient also increases by adding one zero.

So, the next two steps are

$24000 \div 8 = 3000$

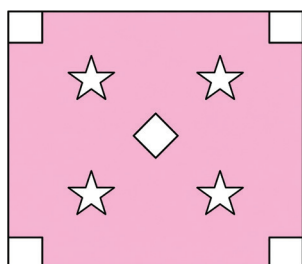
$240000 \div 8 = 30000$

6. A tessellated pattern has shapes fitted together without any gaps or overlapping.
In the given figures only



(a) and (c) are tessellated patterns.

7. The sheet is folded into four equal parts.
So, any cut made on the folded paper will appear four times when the paper is opened.
The star cut will appear four times in the opened sheet. The corner cuts will also appear symmetrically in the four parts of the sheet.



Mental Maths

- The numbers are increasing by 2. So, the next number is $8 + 2 = 10$.
Therefore, the correct answer is (a).
- The numbers are multiplied by 2 each time. So, the next numbers is $8 \times 2 = 16$.
Therefore, the correct answer is (d).
- The symbols are changing their positions in the same order. After the third triangle, the next triangle will be the same as the first triangle.
So, the correct answer is (c).

HOTS

- a. Figure does not have any line of symmetry is: Scalene triangle.
b. One line of symmetry = Isosceles triangle
c. Two lines of symmetry = Rectangle
d. More than two lines of symmetry = Square

CHAPTER 9: MEASUREMENT

Warm Up

- a. The Goliath Beetle is one of the largest insects in the world. It grows up to 12 cm.
b. The Ostrich is the largest living bird, with a height of 3 m.
c. The largest living fish is the Whale Shark. Its maximum verified length till now is approximately 18 m.
d. The fastest mammal on land, the Cheetah, can reach a speed of 100 km per hour.
- a. The Goliath Beetle is also one of the heaviest insects in the world. It weighs up to 100 g.
b. An Ostrich can weigh up to 160 kg.
c. The Whale Shark is the heaviest fish in the world. It can weigh more than 18000 kg.
d. The tiny Pygmy Rabbit is the smallest rabbit in the world. It can weigh up to 400 g.
- a. The camel can live without water for many days. If required, it can drink about 100 L of water at a time.
b. A sparrow needs about 50 mL of water for drinking.



Exercise 9A

1. We know that $1 \text{ km} = 1000 \text{ m}$.
 - a. $8 \text{ km} = 8 \times 1000 \text{ m} = 8000 \text{ m}$
 - b. $12 \text{ km} = 12 \times 1000 \text{ m} = 12000 \text{ m}$
 - c. $24 \text{ km} = 24 \times 1000 \text{ m} = 24000 \text{ m}$
 - d. $96 \text{ km} = 96 \times 1000 \text{ m} = 96000 \text{ m}$
 - e. $8 \text{ km } 417 \text{ m} = (8 \times 1000) \text{ m} + 417 \text{ m}$
 $= 8000 \text{ m} + 417 \text{ m} = 8417 \text{ m}$
 - f. $26 \text{ km } 42 \text{ m} = (26 \times 1000) \text{ m} + 42 \text{ m}$
 $= 26000 \text{ m} + 42 \text{ m} = 26042 \text{ m}$
 - g. $56 \text{ km } 18 \text{ m} = (56 \times 1000) \text{ m} + 18 \text{ m}$
 $= 56000 \text{ m} + 18 \text{ m} = 56018 \text{ m}$
 - h. $13 \text{ km } 5 \text{ m} = (13 \times 1000) \text{ m} + 5 \text{ m}$
 $= 13000 \text{ m} + 5 \text{ m} = 13005 \text{ m}$
2. We know that $1 \text{ m} = 10 \text{ dm}$.
 - a. $13 \text{ m} = 13 \times 10 \text{ dm} = 130 \text{ dm}$
 - b. $15 \text{ m} = 15 \times 10 \text{ dm} = 150 \text{ dm}$
 - c. $39 \text{ m} = 39 \times 10 \text{ dm} = 390 \text{ dm}$
 - d. $412 \text{ m} = 412 \times 10 \text{ dm} = 4120 \text{ dm}$
 - e. $12 \text{ m } 8 \text{ dm} = (12 \times 10) \text{ dm} + 8 \text{ dm}$
 $= 120 \text{ dm} + 8 \text{ dm} = 128 \text{ dm}$
 - f. $19 \text{ m } 9 \text{ dm} = (19 \times 10) \text{ dm} + 9 \text{ dm}$
 $= 190 \text{ dm} + 9 \text{ dm} = 199 \text{ dm}$
 - g. $109 \text{ m } 2 \text{ dm} = (109 \times 10) \text{ dm} + 2 \text{ dm}$
 $= 1090 \text{ dm} + 2 \text{ dm} = 1092 \text{ dm}$
 - h. $3 \text{ m } 5 \text{ dm} = (3 \times 10) \text{ dm} + 5 \text{ dm}$
 $= 30 \text{ dm} + 5 \text{ dm} = 35 \text{ dm}$
3. We know that $1 \text{ m} = 100 \text{ cm}$.
 - a. $9 \text{ m} = 9 \times 100 \text{ cm} = 900 \text{ cm}$
 - b. $15 \text{ m} = 15 \times 100 \text{ cm} = 1500 \text{ cm}$
 - c. $63 \text{ m} = 63 \times 100 \text{ cm} = 6300 \text{ cm}$
 - d. $150 \text{ m} = 150 \times 100 \text{ cm} = 15000 \text{ cm}$
 - e. $16 \text{ m } 40 \text{ cm} = (16 \times 100) \text{ cm} + 40 \text{ cm}$
 $= 1600 \text{ cm} + 40 \text{ cm} = 1640 \text{ cm}$
 - f. $17 \text{ m } 82 \text{ cm} = (17 \times 100) \text{ cm} + 82 \text{ cm}$
 $= 1700 \text{ cm} + 82 \text{ cm} = 1782 \text{ cm}$
 - g. $30 \text{ m } 5 \text{ cm} = (30 \times 100) \text{ cm} + 5 \text{ cm}$
 $= 3000 \text{ cm} + 5 \text{ cm} = 3005 \text{ cm}$
 - h. $5 \text{ m } 62 \text{ cm} = (5 \times 100) \text{ cm} + 62 \text{ cm}$
 $= 500 \text{ cm} + 62 \text{ cm} = 562 \text{ cm}$
4. We know that $1 \text{ cm} = 10 \text{ mm}$.
 - a. $10 \text{ cm} = 10 \times 10 \text{ mm} = 100 \text{ mm}$
 - b. $50 \text{ cm} = 50 \times 10 \text{ mm} = 500 \text{ mm}$
 - c. $29 \text{ cm} = 29 \times 10 \text{ mm} = 290 \text{ mm}$
 - d. $180 \text{ cm} = 180 \times 10 \text{ mm} = 1800 \text{ mm}$

- e. $16 \text{ cm } 3 \text{ mm} = (16 \times 10) \text{ mm} + 3 \text{ mm}$
 $= 160 \text{ mm} + 3 \text{ mm} = 163 \text{ mm}$
- f. $25 \text{ cm } 8 \text{ mm} = (25 \times 10) \text{ mm} + 8 \text{ mm}$
 $= 250 \text{ mm} + 8 \text{ mm} = 258 \text{ mm}$
- g. $35 \text{ cm } 8 \text{ mm} = (35 \times 10) \text{ mm} + 8 \text{ mm}$
 $= 350 \text{ mm} + 8 \text{ mm} = 358 \text{ mm}$
- h. $3 \text{ cm } 11 \text{ mm} = (3 \times 10) \text{ mm} + 11 \text{ mm}$
 $= 30 \text{ mm} + 11 \text{ mm} = 41 \text{ mm}$

Exercise 9B

1. We know that $1 \text{ cm} = 10 \text{ mm}$
 - a. $85 \text{ mm} = 80 \text{ mm} + 5 \text{ mm} = (80 \div 10) \text{ cm} + 5 \text{ mm} = 8 \text{ cm } 5 \text{ mm}$
 - b. $105 \text{ mm} = 100 \text{ mm} + 5 \text{ mm} = (100 \div 10) \text{ cm} + 5 \text{ mm} = 10 \text{ cm } 5 \text{ mm}$
 - c. $63 \text{ mm} = 60 \text{ mm} + 3 \text{ mm} = (60 \div 10) \text{ cm} + 3 \text{ mm} = 6 \text{ cm} + 3 \text{ mm}$
 - d. $95 \text{ mm} = 90 \text{ mm} + 5 \text{ mm} = (90 \div 10) \text{ cm} + 5 \text{ mm} = 9 \text{ cm } 5 \text{ mm}$
2. We know that $100 \text{ cm} = 1 \text{ m}$
 - a. $685 \text{ cm} = 600 \text{ cm} + 85 \text{ cm} = (600 \div 100) \text{ m} + 85 \text{ cm} = 6 \text{ m } 85 \text{ cm}$
 - b. $305 \text{ cm} = 300 \text{ cm} + 5 \text{ cm} = (300 \div 100) \text{ m} + 5 \text{ cm} = 3 \text{ m } 5 \text{ cm}$
 - c. $925 \text{ cm} = 900 \text{ cm} + 25 \text{ cm} = (900 \div 100) \text{ m} + 25 \text{ cm} = 9 \text{ m } 25 \text{ cm}$
 - d. $798 \text{ cm} = 700 \text{ cm} + 98 \text{ cm} = (700 \div 100) \text{ m} + 98 \text{ cm} = 7 \text{ m } 98 \text{ cm}$
 - e. $568 \text{ cm} = 500 \text{ cm} + 68 \text{ cm} = (500 \div 100) \text{ m} + 68 \text{ cm} = 5 \text{ m } 68 \text{ cm}$
 - f. $409 \text{ cm} = 400 \text{ cm} + 9 \text{ cm} = (400 \div 100) \text{ m} + 9 \text{ cm} = 4 \text{ m } 9 \text{ cm}$
 - g. $6666 \text{ cm} = 6600 \text{ cm} + 66 \text{ cm} = (6600 \div 100) \text{ m} + 66 \text{ cm} = 66 \text{ m } 66 \text{ cm}$
 - h. $2333 \text{ cm} = 2300 \text{ cm} + 33 \text{ cm} = (2300 \div 100) \text{ m} + 33 \text{ cm} = 23 \text{ m } 33 \text{ cm}$
3. We know that $1 \text{ km} = 1000 \text{ m}$
 - a. $8000 \text{ m} = 8000 \div 1000 = 8 \text{ km}$
 - b. $15000 \text{ m} = 15000 \div 1000 = 15 \text{ km}$
 - c. $79000 \text{ m} = 79000 \div 1000 = 79 \text{ km}$
 - d. $45000 \text{ m} = 45000 \div 1000 = 45 \text{ km}$
4. We know that $1 \text{ cm} = 10 \text{ mm}$, $100 \text{ cm} = 1 \text{ m}$,
 $1000 \text{ mm} = 1 \text{ m}$
 $9490 \text{ mm} = (9000 \div 1000) \text{ m} + 490 \text{ mm} = 9 \text{ m } 490 \text{ mm}$

5. a. Kanchenjunga:

$$8586 \text{ m} = 8000 \text{ m} + 586 \text{ m} = (8000 \div 1000) \text{ km} + 586 \text{ m} = 8 \text{ km } 586 \text{ m}$$

b. Nanda Devi:

$$7816 \text{ m} = 7000 \text{ m} + 816 \text{ m} = (7000 \div 1000) \text{ km} + 816 \text{ m} = 7 \text{ km } 816 \text{ m}$$

c. Kamet:

$$7756 \text{ m} = 7000 \text{ m} + 756 \text{ m} = (7000 \div 1000) \text{ km} + 756 \text{ m} = 7 \text{ km } 756 \text{ m}$$

d. Mukut Parbat:

$$7242 \text{ m} = 7000 \text{ m} + 242 \text{ m} = (7000 \div 1000) \text{ km} + 242 \text{ m} = 7 \text{ km } 242 \text{ m}$$

e. Rishi Pahar:

$$6992 \text{ m} = 6000 \text{ m} + 992 \text{ m} = (6000 \div 1000) \text{ km} + 992 \text{ m} = 6 \text{ km } 992 \text{ m}$$

Mountain	Height (in m)	Height (in km and m)
Kanchenjunga	8586 m	8 km 586 m
Nanda Devi	7816 m	7 km 816 m
Kamet	7756 m	7 km 756 m
Mukut Parbat	7242 m	7 km 242 m
Rishi Pahar	6992 m	6 km 992 m

m	cm
18	65
+	9
28	21

Here, $65 \text{ cm} + 56 \text{ cm} = 121 \text{ cm} = 1 \text{ m } 21 \text{ cm}$.

So, $18 \text{ m } 65 \text{ cm} + 9 \text{ m } 56 \text{ cm} = 28 \text{ m } 21 \text{ cm}$

b. 63 m 64 cm and 15 m 69 cm

m	cm
63	64
+	15
79	33

Here, $64 \text{ cm} + 69 \text{ cm} = 133 \text{ cm} = 1 \text{ m } 33 \text{ cm}$.

So, $63 \text{ m } 64 \text{ cm} + 15 \text{ m } 69 \text{ cm} = 79 \text{ m } 33 \text{ cm}$

c. 56 km 45 m and 16 km 75 m

km	m
56	45
+	16
72	120

So, $56 \text{ km } 45 \text{ m} + 16 \text{ km } 75 \text{ m} = 72 \text{ km } 120 \text{ m}$

d. 18 km 26 m, 9 km 36 m and 39 km 77 m

km	m
18	26
+	9
39	77
66	139

So, $18 \text{ km } 26 \text{ m} + 9 \text{ km } 36 \text{ m} + 39 \text{ km } 77 \text{ m} = 66 \text{ km } 139 \text{ m}$

3. a.

km	m
27	109
−	18
8	752

So, $27 \text{ km } 109 \text{ m} - 18 \text{ km } 357 \text{ m} = 8 \text{ km } 752 \text{ m}$

b.

m	cm
45	03
−	10
34	5

So, $45 \text{ m } 03 \text{ cm} - 10 \text{ m } 98 \text{ cm} = 34 \text{ m } 5 \text{ cm}$

Exercise 9C

1. a.

km	m
23	175
+	23
46	279

So, $23 \text{ km } 175 \text{ m} + 23 \text{ km } 104 \text{ m} = 46 \text{ km } 279 \text{ m}$

b.

m	cm
24	43
+	28
53	34

So, $24 \text{ m } 43 \text{ cm} + 28 \text{ m } 91 \text{ cm} = 53 \text{ m } 34 \text{ cm}$

c.

cm	mm
43	4
+	37
81	3

So, $43 \text{ cm } 4 \text{ mm} + 37 \text{ cm } 9 \text{ mm} = 81 \text{ cm } 3 \text{ mm}$

2. a. Arrange the given measures in the appropriate columns and then add column wise.

18 m 65 cm and 9 m 56 cm



c.

	km	m
	188	463
–	46	187
	142	276

So, $188 \text{ km } 463 \text{ m} - 46 \text{ km } 187 \text{ m} = 142 \text{ km } 276 \text{ m}$

4. a.

	m	cm
	56	40
–	48	20
	08	20

b.

	m	cm
	645	47
–	68	69
	576	78

c.

	km	m
	98	205
–	59	326
	38	879

d.

	km	m
	48	78
–	18	280
	29	798

5. Length of wool in the roll = 17 m 16 cm
Length of wool cut off = 8 m 42 cm

	m	cm
	17	16
–	8	42
	8	74

The length of wool left in the roll is 8 m 74 cm.

6. Distance travelled by train = 18 km 325 m
Distance travelled by bus = 68 km 218 m
Distance travelled by car = 8 km 705 m

	km	m
	18	325
+	68	218
	8	705
	94	1248

Since $1000 \text{ m} = 1 \text{ km}$,

$1248 \text{ m} = 1 \text{ km } 248 \text{ m}$

So, $94 \text{ km } 1248 \text{ m} = 95 \text{ km } 248 \text{ m}$

Thus, the total distance travelled by Saket was 95 km 248 m.

7. Distance walked = 275 m

Distance travelled by bus = 5 km 548 m

One-way distance travelled by Anil =

	km	m
	5	548
+	0	275
	5	823

He returned home travelling the same distance.

Total distance travelled =

$5 \text{ km } 823 \text{ m} + 5 \text{ km } 823 \text{ m}$

	km	m
	5	823
+	5	823
	10	1646

Since $1000 \text{ m} = 1 \text{ km}$,

$1646 \text{ m} = 1 \text{ km } 646 \text{ m}$

So, $10 \text{ km } 1646 \text{ m} = 11 \text{ km } 646 \text{ m}$

Therefore, the total distance travelled by Anil on that day was 11 km 646 m.

8. Total length of the wall = 8851 km 800 m

Length of actual wall = 6259 km 600 m

Length of trenches = 359 km 700 m

First, find the total length of actual wall and trenches.

	km	m
	6259	600
+	359	700
	6618	1300

Since $1000 \text{ m} = 1 \text{ km}$,

$1300 \text{ m} = 1 \text{ km } 300 \text{ m}$

So, $6618 \text{ km } 1300 \text{ m} = 6619 \text{ km } 300 \text{ m}$

Now, subtract this from the total length.

	km	m
	8851	800
–	6619	300
	2232	500

Thus, The length of the natural barriers is 2232 km 500 m.

Exercise 9D

1. We know that $1 \text{ kg} = 1000 \text{ g}$

a. $9 \text{ kg} = 9 \times 1000 \text{ g} = 9000 \text{ g}$

b. $26 \text{ kg} = 26 \times 1000 \text{ g} = 26000 \text{ g}$

c. $215 \text{ kg} = 215 \times 1000 \text{ g} = 215000 \text{ g}$

- d. $320 \text{ kg} = 320 \times 1000 \text{ g} = 320000 \text{ g}$
 e. $8 \text{ kg } 232 = 8 \times 1000 \text{ g} + 232 \text{ g} = 8000 \text{ g} + 232 \text{ g} = 8232 \text{ g}$
 f. $18 \text{ kg } 20 \text{ g} = 18 \times 1000 \text{ g} + 20 \text{ g} = 18000 \text{ g} + 20 \text{ g} = 18020 \text{ g}$
 g. $19 \text{ kg } 6 \text{ g} = 19 \times 1000 \text{ g} + 6 \text{ g} = 19000 \text{ g} + 6 \text{ g} = 19006 \text{ g}$
 h. $55 \text{ kg} = 55 \times 1000 \text{ g} + 350 \text{ g} = 55000 \text{ g} + 350 \text{ g} = 55350 \text{ g}$

2. We know that $1 \text{ g} = 1000 \text{ mg}$

- a. $8 \text{ g} = 8 \times 1000 \text{ mg} = 8000 \text{ mg}$
 b. $45 \text{ g} = 45 \times 1000 \text{ mg} = 45000 \text{ mg}$
 c. $750 \text{ g} = 750 \times 1000 \text{ mg} = 750000 \text{ mg}$
 d. $945 \text{ g} = 945 \times 1000 \text{ mg} = 945000 \text{ mg}$
 e. $8 \text{ g } 370 \text{ mg} = 8 \times 1000 \text{ mg} + 370 \text{ mg} = 8370 \text{ mg}$
 f. $15 \text{ g } 13 \text{ mg} = 15 \times 1000 \text{ mg} + 13 \text{ mg} = 15013 \text{ mg}$
 g. $150 \text{ g } 9 \text{ mg} = 150 \times 1000 \text{ mg} + 9 \text{ mg} = 150009 \text{ mg}$
 h. $14 \text{ g } 203 \text{ mg} = 14 \times 1000 \text{ mg} + 203 \text{ mg} = 14203 \text{ mg}$

3. a. $9 \text{ kg } 1 \text{ hg} = 9 \times 10 \text{ hg} + 1 \text{ hg} = 90 \text{ hg} + 1 \text{ hg} = 91 \text{ hg}$ ($10 \text{ hg} = 1 \text{ kg}$)
 $91 \text{ hg} = 91 \times 100 \text{ g} = 9100 \text{ g}$ ($1 \text{ hg} = 100 \text{ g}$)
 b. $20 \text{ kg } 4 \text{ hg} = 20 \times 10 \text{ hg} + 4 \text{ hg} = 200 \text{ hg} + 4 \text{ hg} = 204 \text{ hg}$
 $204 \text{ hg} = 204 \times 100 \text{ g} = 20400 \text{ g}$

4. Mass of Anu's cat = 5 kg

Mass of Leena's cat = 3 kg 250 g

For Anu's cat:

$$5 \text{ kg} = 5 \times 1000 \text{ g} = 5000 \text{ g}$$

For Leena's cat:

$$3 \text{ kg } 250 \text{ g} = 3000 \text{ g} + 250 \text{ g} = 3250 \text{ g}$$

Therefore, the mass of Anu's cat is 5000 g and the mass of Leena's cat is 3250 g.

Exercise 9E

1. a. $7000 \text{ g} = (7000 \div 1000) \text{ kg} = 7 \text{ kg}$
 b. $9000 \text{ g} = (9000 \div 1000) \text{ kg} = 9 \text{ kg}$
 c. $26000 \text{ g} = (26000 \div 1000) \text{ kg} = 26 \text{ kg}$
 d. $48000 \text{ g} = (48000 \div 1000) \text{ kg} = 48 \text{ kg}$
 2. a. $6300 \text{ g} = 6000 \text{ g} + 300 \text{ g} = (6000 \div 1000) \text{ kg} + 300 \text{ g} = 6 \text{ kg } 300 \text{ g}$

b. $4323 \text{ g} = 4000 \text{ g} + 323 \text{ g} = (4000 \div 1000) \text{ kg} + 323 \text{ g} = 4 \text{ kg } 323 \text{ g}$

c. $5908 \text{ g} = 5000 \text{ g} + 908 \text{ g} = (5000 \div 1000) \text{ kg} + 908 \text{ g} = 5 \text{ kg } 908 \text{ g}$

d. $3065 \text{ g} = 3000 \text{ g} + 65 \text{ g} = (3000 \div 1000) \text{ kg} + 65 \text{ g} = 3 \text{ kg } 65 \text{ g}$

3. a. $5605 \text{ mg} = 5000 \text{ mg} + 605 \text{ mg} = (5000 \div 1000) \text{ g} + 605 \text{ mg} = 5 \text{ g } 605 \text{ mg}$

b. $6463 \text{ mg} = 6000 \text{ mg} + 463 \text{ mg} = (6000 \div 1000) \text{ g} + 463 \text{ mg} = 6 \text{ g } 463 \text{ mg}$

c. $5897 \text{ mg} = 5000 \text{ mg} + 897 \text{ mg} = (5000 \div 1000) \text{ g} + 897 \text{ mg} = 5 \text{ g } 897 \text{ mg}$

d. $27980 \text{ mg} = 27000 \text{ mg} + 980 \text{ mg} = (27000 \div 1000) \text{ g} + 980 \text{ mg} = 27 \text{ g } 980 \text{ mg}$

e. $78970 \text{ mg} = 78000 \text{ mg} + 970 \text{ mg} = (78000 \div 1000) \text{ g} + 970 \text{ mg} = 78 \text{ g } 970 \text{ mg}$

f. $44000 \text{ mg} = 44000 \text{ mg} = (44000 \div 1000) \text{ g} = 44 \text{ g}$

4. a. Banana

Vitamin A = 5 g 190 mg
 $= 5000 \text{ mg} + 190 \text{ mg} = 5190 \text{ mg}$

Vitamin B = 1 g 253 mg
 $= 1000 \text{ mg} + 253 \text{ mg} = 1253 \text{ mg}$

Vitamin C = 1 g 490 mg
 $= 1000 \text{ mg} + 490 \text{ mg} = 1490 \text{ mg}$

b. Apple

Vitamin A = 3 g 956 mg
 $= 3000 \text{ mg} + 956 \text{ mg} = 3956 \text{ mg}$

Vitamin B = 2 g 990 mg
 $= 2000 \text{ mg} + 990 \text{ mg} = 2990 \text{ mg}$



$$\begin{aligned}\text{Vitamin C} &= 4 \text{ g } 530 \text{ mg} \\ &= 4000 \text{ mg} + 530 \text{ mg} \\ &= 4530 \text{ mg}\end{aligned}$$

c. Carrot

$$\begin{aligned}\text{Vitamin A} &= 4 \text{ g } 82 \text{ mg} \\ &= 4000 \text{ mg} + 82 \text{ mg} \\ &= 4082 \text{ mg}\end{aligned}$$

$$\begin{aligned}\text{Vitamin B} &= 1 \text{ g } 6 \text{ mg} \\ &= 1000 \text{ mg} + 6 \text{ mg} \\ &= 1006 \text{ mg}\end{aligned}$$

$$\begin{aligned}\text{Vitamin C} &= 1 \text{ g } 13 \text{ mg} \\ &= 1000 \text{ mg} + 13 \text{ mg} \\ &= 1013 \text{ mg}\end{aligned}$$

Fruit	Vitamin A		Vitamin B		Vitamin C	
	g	mg	g	mg	g	mg
a. Banana	5 g	5190 mg	1 g	1253 mg	1 g	1490 mg
b. Apple	3 g	3956 mg	2 g	2990 mg	4 g	4530 mg
c. Carrot	4 g	4082 mg	1 g	1006 mg	1 g	1013 mg

Exercise 9F

$$\begin{array}{r} \text{1. a.} \quad \begin{array}{|c|c|} \hline \text{kg} & \text{g} \\ \hline 300 & 000 \\ + & 287 & 204 \\ \hline 587 & 204 \\ \hline \end{array} \quad \text{b.} \quad \begin{array}{|c|c|} \hline \text{kg} & \text{g} \\ \hline 243 & 550 \\ + & 178 & 004 \\ \hline 421 & 554 \\ \hline \end{array} \end{array}$$

$$\begin{array}{r} \text{c.} \quad \begin{array}{|c|c|} \hline \text{kg} & \text{g} \\ \hline 500 & 540 \\ + & 239 & 261 \\ \hline 739 & 801 \\ \hline \end{array} \end{array}$$

$$\begin{array}{r} \text{2. a.} \quad \begin{array}{|c|c|} \hline \text{kg} & \text{g} \\ \hline 48 & 948 \\ + & 13 & 666 \\ \hline 62 & 614 \\ \hline \end{array} \quad \text{b.} \quad \begin{array}{|c|c|} \hline \text{kg} & \text{g} \\ \hline 26 & 430 \\ + & 27 & 570 \\ \hline 54 & 000 \\ \hline \end{array} \end{array}$$

$$\begin{array}{r} \text{c.} \quad \begin{array}{|c|c|} \hline \text{kg} & \text{g} \\ \hline 45 & 585 \\ + & 48 & 894 \\ \hline 94 & 479 \\ \hline \end{array} \quad \text{d.} \quad \begin{array}{|c|c|} \hline \text{kg} & \text{g} \\ \hline 360 & 870 \\ + & 140 & 550 \\ \hline 501 & 420 \\ \hline \end{array} \end{array}$$

$$\begin{array}{r} \text{3. a.} \quad \begin{array}{|c|c|} \hline \text{kg} & \text{g} \\ \hline 240 & 330 \\ - & 175 & 299 \\ \hline 65 & 031 \\ \hline \end{array} \quad \text{b.} \quad \begin{array}{|c|c|} \hline \text{kg} & \text{g} \\ \hline 208 & 310 \\ - & 45 & 375 \\ \hline 162 & 935 \\ \hline \end{array} \end{array}$$

$$\begin{array}{r} \text{c.} \quad \begin{array}{|c|c|} \hline \text{kg} & \text{g} \\ \hline 600 & 000 \\ - & 495 & 825 \\ \hline 104 & 175 \\ \hline \end{array} \end{array}$$

$$\begin{array}{r} \text{4. a.} \quad \begin{array}{|c|c|} \hline \text{kg} & \text{g} \\ \hline 56 & 036 \\ - & 54 & 020 \\ \hline 02 & 016 \\ \hline \end{array} \quad \text{b.} \quad \begin{array}{|c|c|} \hline \text{kg} & \text{g} \\ \hline 620 & 756 \\ - & 580 & 090 \\ \hline 40 & 666 \\ \hline \end{array} \end{array}$$

$$\begin{array}{r} \text{c.} \quad \begin{array}{|c|c|} \hline \text{kg} & \text{g} \\ \hline 40 & 090 \\ - & 28 & 289 \\ \hline 11 & 701 \\ \hline \end{array} \quad \text{d.} \quad \begin{array}{|c|c|} \hline \text{kg} & \text{g} \\ \hline 67 & 160 \\ - & 44 & 275 \\ \hline 22 & 885 \\ \hline \end{array} \end{array}$$

5. a. Maximum mass = 25 kg 400g
Minimum mass = 13 kg 725g

$$\begin{array}{|c|c|} \hline \text{kg} & \text{g} \\ \hline 25 & 400 \\ - & 13 & 725 \\ \hline 11 & 675 \\ \hline \end{array}$$

The difference between the maximum and minimum mass is 11 kg 675 g.

$$\begin{array}{r} \text{b.} \quad \begin{array}{|c|c|} \hline \text{kg} & \text{g} \\ \hline 13 & 725 \\ + & 18 & 675 \\ \hline 32 & 400 \\ \hline \end{array} \end{array}$$

The boxes of 13 kg 725 g and 18 kg 675 g have a total mass of 32 kg 400 g.

$$\begin{array}{r} \text{c.} \quad \begin{array}{|c|c|} \hline \text{kg} & \text{g} \\ \hline 25 & 400 \\ + & 13 & 725 \\ \hline 39 & 125 \\ \hline \end{array} \end{array}$$

39 kg 125g is less than 40 kg but greater than 36 kg.

Thus, the boxes of 25 kg 400 g and 13 kg 725 g have a total mass of less than 40 kg but greater than 36 kg.

d.	kg	g
	25	400
	13	725
+	22	085
+	18	675
	79	885

Thus, the total mass of all the fruit boxes is 79 kg 885 g.

Exercise 9G

- We know that 1 kL = 1000 L
 - 26 kL = $26 \times 1000 \text{ L} = 26000 \text{ L}$
 - 30 kL = $30 \times 1000 \text{ L} = 30000 \text{ L}$
 - 156 kL = $156 \times 1000 \text{ L} = 156000 \text{ L}$
 - 12 kL 470 = $12 \text{ kL} + 470 \text{ L}$
 $= 12 \times 1000 \text{ L} + 470 \text{ L} = 12470 \text{ L}$
 - 63 kL 65 L = $63 \text{ kL} + 65 \text{ L}$
 $= 63 \times 1000 \text{ L} + 65 \text{ L} = 63065 \text{ L}$
 - 315 kL 8 L = $315 \text{ kL} + 8 \text{ L}$
 $= 315 \times 1000 \text{ L} + 8 \text{ L} = 315008 \text{ L}$
- We know that 1 L = 1000 mL
 - 13 L = $13 \times 1000 \text{ mL} = 13000 \text{ mL}$
 - 16 L = $16 \times 1000 \text{ mL} = 16000 \text{ mL}$
 - 11 L = $11 \times 1000 \text{ mL} = 11000 \text{ mL}$
 - 15 L 350 ml = $15 \text{ L} + 350 \text{ mL} = 15 \times 1000 \text{ mL} + 350 \text{ mL} = 15350 \text{ mL}$
 - 26 L 50 mL = $26 \text{ L} + 50 \text{ mL} = 26 \times 1000 \text{ mL} + 50 \text{ mL} = 26050 \text{ mL}$
 - 116 L 580 mL = $116 \text{ L} + 580 \text{ mL}$
 $= 116 \times 1000 \text{ mL} + 580 \text{ mL} = 116580 \text{ mL}$
- 13000 L = $(13000 \div 1000) \text{ kL} = 13 \text{ kL}$
 - 12000 L = $(12000 \div 1000) \text{ kL} = 12 \text{ kL}$
 - 6352 L = $6000 \text{ L} + 352 \text{ L} = (6000 \div 1000) \text{ kL} + 352 \text{ L} = 6 \text{ kL } 352 \text{ L}$
 - 2008 L = $2000 \text{ L} + 8 \text{ L} = (2000 \div 1000) \text{ kL} + 8 \text{ L} = 2 \text{ kL } 8 \text{ L}$
- 4500 mL = $4000 \text{ mL} + 500 \text{ mL} = (4000 \div 1000) \text{ L} + 500 \text{ mL} = 4 \text{ L } 500 \text{ mL}$
 - 8756 mL = $8000 \text{ mL} + 756 \text{ mL} = (8000 \div 1000) \text{ L} + 756 \text{ mL} = 8 \text{ L } 756 \text{ mL}$
 - 9767 mL = $9000 \text{ mL} + 767 \text{ mL} = (9000 \div 1000) \text{ L} + 767 \text{ mL} = 9 \text{ L } 767 \text{ mL}$
 - 1808 mL = $1000 \text{ mL} + 808 \text{ mL} = (1000 \div 1000) \text{ L} + 808 \text{ mL} = 1 \text{ L } 808 \text{ mL}$

- 1 L = 1000 mL
 - 3 L = $3 \times 1000 \text{ mL} = 3000 \text{ mL}$
 - 4 L = $4 \times 1000 \text{ mL} = 4000 \text{ mL}$

Exercise 9H

- | | |
|----------|-----------|
| L | mL |
| 35 | 245 |
| + | 63 |
| 98 | 352 |

L	mL
180	265
+	59
239	735
 - | | |
|----------|-----------|
| L | mL |
| 395 | 034 |
| + | 65 |
| 460 | 062 |
- | | |
|----------|-----------|
| L | mL |
| 50 | 725 |
| + | 10 |
| 60 | 950 |

L	mL
32	864
+	18
51	299
 - | | |
|----------|-----------|
| L | mL |
| 72 | 70 |
| + | 25 |
| 97 | 820 |

L	mL
7	65
+	18
25	521
- | | |
|----------|-----------|
| L | mL |
| 61 | 438 |
| - | 17 |
| 43 | 967 |

L	mL
140	284
-	95
45	216
 - | | |
|----------|-----------|
| L | mL |
| 300 | 280 |
| - | 100 |
| 199 | 920 |
- | | |
|----------|-----------|
| L | mL |
| 90 | 770 |
| - | 19 |
| 71 | 020 |

L	mL
30	40
-	26
04	12
 - | | |
|----------|-----------|
| L | mL |
| 45 | 140 |
| - | 26 |
| 18 | 670 |

L	mL
19	300
-	17
01	922



5. Volume of water in one bucket = 44 L 375 mL
 Volume of water in another bucket = 45 L 876 mL
 Difference of the volumes:

	L	mL
	45	876
–	44	375
	01	501

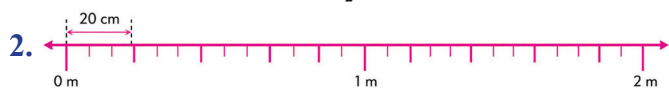
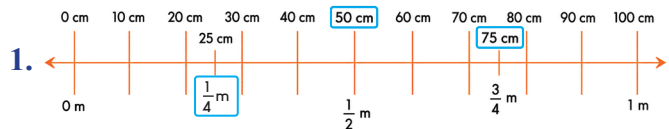
Thus, the difference of the volumes in the two buckets is 1 L 501 mL.

6. Milk sold on the first day = 68 L 850 mL
 Milk sold on the second day = 98 L 760 mL
 Milk sold on the third day = 84 L 90 mL
 Total sale of milk in these three days =

	L	mL
	68	850
+	98	760
+	84	090
	251	700

Thus, the total sale of milk in these three days was 251 L 700 mL

Learning Logs



$$2 \text{ m} = (2 \times 100) \text{ cm} = 200 \text{ cm}$$

$$\Rightarrow 200 \text{ cm} \div 20 \text{ cm} = 10 \text{ stickers}$$

There are 10 stickers are needed to cover the length of the board completely.

3. a. $2455 \text{ cm} = 2400 \text{ cm} + 55 \text{ cm}$
 $= (2400 \div 100) \text{ m} + 55 \text{ cm} = 24 \text{ m } 55 \text{ cm}$
 b. $26 \text{ L} = 26 \times 1000 \text{ mL} = 26000 \text{ mL}$
 $26 \text{ L } 5 \text{ mL} = 26000 \text{ mL} + 5 \text{ mL} = 26005 \text{ mL}$
 c. $5377 \text{ m} = 5000 \text{ m} + 377 \text{ m}$
 $= (5000 \div 1000) \text{ km} + 377 \text{ m} = 5 \text{ km } 377 \text{ m}$
 d. $40 \text{ kg} = 40 \times 1000 \text{ g} = 40000 \text{ g}$
 So, $40 \text{ kg } 25 \text{ g} = 40000 \text{ g} + 25 \text{ g} = 40025 \text{ g}$
 e. $2008 \text{ mg} = 2000 \text{ mg} + 8 \text{ mg}$
 $= (2000 \div 1000) \text{ g} + 8 \text{ mg} = 2 \text{ g } 8 \text{ mg}$
 f. $3141 \text{ g} = 3000 \text{ g} + 141 \text{ g}$
 $= (3000 \div 1000) \text{ kg} + 141 \text{ g} = 3 \text{ kg } 141 \text{ g}$

- g. $14339 \text{ mL} = 14000 \text{ mL} + 339 \text{ mL}$
 $= (14000 \div 1000) \text{ L} + 339 \text{ mL} = 14 \text{ L } 339 \text{ mL}$
 h. $15 \text{ g} = 15 \times 1000 \text{ mg} = 15000 \text{ mg}$
 So, $15 \text{ g } 40 \text{ mg} = 15000 \text{ mg} + 40 \text{ mg}$
 $= 15040 \text{ mg}$

4. a.	kg	g	b.	m	cm
	204	026		55	26
	+	029		18	26
	+	031		51	09
		264		124	61

c.	<table><tr><th>g</th><th>mg</th></tr><tr><td>249</td><td>069</td></tr><tr><td>+</td><td>3</td></tr><tr><td>+</td><td>4</td></tr><tr><td colspan="2"> </td></tr><tr><td>256</td><td>929</td></tr></table>	g	mg	249	069	+	3	+	4			256	929	d.	<table><tr><th>L</th><th>mL</th></tr><tr><td>14</td><td>263</td></tr><tr><td>+</td><td>28</td></tr><tr><td>+</td><td>9</td></tr><tr><td colspan="2"> </td></tr><tr><td>51</td><td>538</td></tr></table>	L	mL	14	263	+	28	+	9			51	538
g	mg																										
249	069																										
+	3																										
+	4																										
256	929																										
L	mL																										
14	263																										
+	28																										
+	9																										
51	538																										

5. a. $20 \text{ kg} - 13 \text{ kg } 209 \text{ g} = 20000 \text{ g} - 13209 \text{ g}$
 $= 6791 \text{ g} = 6000 \text{ g} + 791 \text{ g} = 6 \text{ kg } 791 \text{ g}$
 b. $18 \text{ L } 22 \text{ mL} - 5 \text{ L } 405 \text{ mL}$
 $= 18022 \text{ mL} - 5405 \text{ mL} = 12617 \text{ mL}$
 $= 12000 \text{ mL} + 617 \text{ mL} = 12 \text{ L } 617 \text{ mL}$
 c. $1 \text{ m} - 25 \text{ cm } 4 \text{ mm}$
 $= 100 \text{ cm} - 25 \text{ cm } 4 \text{ mm}$
 $= 1000 \text{ mm} - 25 \times 10 \text{ mm} + 4 \text{ mm}$
 $= 1000 \text{ mm} - 254 \text{ mm}$
 $= 746 \text{ mm} = 740 \text{ mm} + 6 \text{ mm}$
 $= (740 \div 10) \text{ cm} + 6 \text{ mm} = 74 \text{ cm } 6 \text{ mm}$
 d. $100 \text{ L} - 54 \text{ L } 23 \text{ mL} = 100000 \text{ mL} - 54023 \text{ mL}$
 $= 45977 \text{ mL} = 45000 \text{ mL} + 977 \text{ mL}$
 $= 45 \text{ L } 977 \text{ mL}$
 e. $2 \text{ kg } 19 \text{ mg} - 402 \text{ g } 24 \text{ mg}$
 $= 2 \times 1000 \text{ g} + 19 \text{ mg} - 402 \text{ g } 24 \text{ mg}$
 $= 2000 \text{ g } 19 \text{ mg} - 402 \text{ g } 24 \text{ mg}$
 $= 1597 \text{ g } 995 \text{ mg}$
 f. $50 \text{ km } 2 \text{ m} - 34 \text{ km } 314 \text{ m}$
 $= (50 \times 1000) \text{ m} + 2 \text{ m} - [(34 \times 1000) \text{ m} + 314 \text{ m}]$
 $= 50002 \text{ m} - 34314 \text{ m}$
 $= 15688 \text{ m} = 15 \text{ km } 688 \text{ m}$
 6. Amit's height = 1720 mm
 $= 172 \text{ cm}$
 Total height of Sujoy and Amit
 $= 3 \text{ m } 40 \text{ cm} = 340 \text{ cm}$

So, Sujoy's height = Total height – Amit's height
 $= 340 \text{ cm} - 172 \text{ cm} = 168 \text{ cm}$

Therefore,

Sujoy's height = $168 \text{ cm} = 1680 \text{ mm}$

Rajat's height is 2 cm 4 mm more than Sujoy's height.

$2 \text{ cm } 4 \text{ mm} = 24 \text{ mm}$

Rajat's height = $1680 \text{ mm} + 24 \text{ mm}$

$= 1704 \text{ mm} = 170 \text{ cm } 4 \text{ mm}$

Rajat's height is 4 cm 2 mm less than Mayank's height.

So, Mayank's height = Rajat's height + 4 cm 2 mm

$= 1704 \text{ mm} + 42 \text{ mm} = 1746 \text{ mm}$

$= 174 \text{ cm } 6 \text{ mm}$

Hence, the heights are

Amit = 172 cm

Sujoy = 168 cm

Rajat = $170 \text{ cm } 4 \text{ mm}$

Mayank = $174 \text{ cm } 6 \text{ mm}$

Ascending order of heights:

Sujoy = 168 cm

Rajat = $170 \text{ cm } 4 \text{ mm}$

Amit = 172 cm

Mayank = $174 \text{ cm } 6 \text{ mm}$

7. Juice sold by the shop every day = $36 \text{ L } 756 \text{ mL}$

The neighbouring shop sells 5364 mL less.

$5364 \text{ mL} = 5 \text{ L } 364 \text{ mL}$

So, juice sold by the neighbouring shop

$= 36 \text{ L } 756 \text{ mL} - 5 \text{ L } 364 \text{ mL} = 31 \text{ L } 392 \text{ mL}$

Hence, the neighbouring juice shop sells

$31 \text{ L } 392 \text{ mL}$ of juice every day.

8. Total wheat in the granary = $345 \text{ kg } 234 \text{ g}$

Wheat distributed = $199 \text{ kg } 564 \text{ g}$

Since 234 g is less than 564 g , we borrow 1 kg .

$345 \text{ kg } 234 \text{ g} = 344 \text{ kg } 1234 \text{ g}$

Now subtract:

$344 \text{ kg } 1234 \text{ g} - 199 \text{ kg } 564 \text{ g} = 145 \text{ kg } 670 \text{ g}$

Hence, $145 \text{ kg } 670 \text{ g}$ of wheat is left.

Mental Maths

1. $2 \text{ m} = 2 \times 100 \text{ cm} = 200 \text{ cm}$

$= 200 \times 10 \text{ mm} = 2000 \text{ mm}$

Hence, the correct answer is (a).

2. $10 \text{ km} - 3 \text{ km } 500 \text{ m}$

$= 10 \times 1000 \text{ m} - (3 \times 1000 \text{ m} + 500 \text{ m})$

$= 10000 \text{ m} - 3500 \text{ m}$

$= 6500 \text{ m} = 6000 \text{ m} + 500 \text{ m} = 6 \text{ km } 500 \text{ m}$

Hence, the correct answer is (b).

3. 8 L of juice is distributed out of $10 \text{ L } 500 \text{ mL}$.

Juice left = $10 \text{ L } 500 \text{ mL} - 8 \text{ L} = 2 \text{ L } 500 \text{ mL}$

$= 2500 \text{ mL}$

Hence, the correct answer is (a).

4. Total weight of grapes = $1 \text{ kg } 500 \text{ g}$

Weight of grapes rotten = 275 g

Total weight of fresh grapes = $1 \text{ kg } 500 \text{ g} - 275 \text{ g}$

$= 1 \text{ kg } 225 \text{ g}$

Hence, the correct answer is (c).

5. Original length of pencil = 18 cm

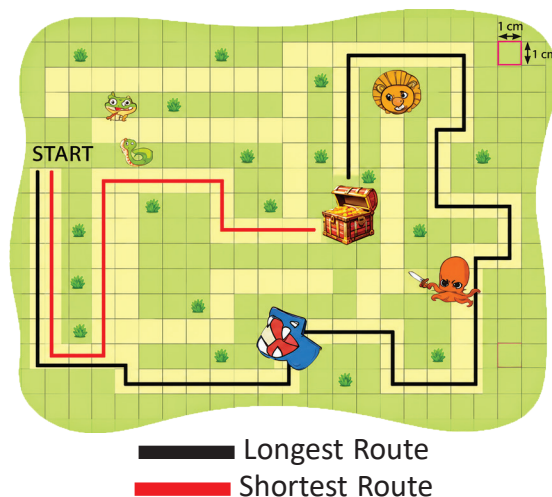
Length of pencil after 4 days = $6 \text{ cm } 4 \text{ mm}$

So, the length of pencil used by Rajesh

$= 18 \text{ cm} - 6 \text{ cm } 4 \text{ mm} = 11 \text{ cm } 6 \text{ mm}$

Hence, the correct answer is (b).

HOTS



CHAPTER 10: PERIMETER AND AREA

Warm Up

1. $6 \text{ cm} + 10 \text{ cm} + 6 \text{ cm} + 10 \text{ cm} = 32 \text{ cm}$

2. $12 \text{ cm} + 8 \text{ cm} + 12 \text{ cm} + 8 \text{ cm} = 40 \text{ cm}$

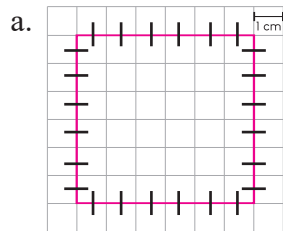
3. Total length of ribbon = $32 \text{ cm} + 40 \text{ cm} = 72 \text{ cm}$

So, they need to buy 72 cm ribbon in all to decorate the pictures.

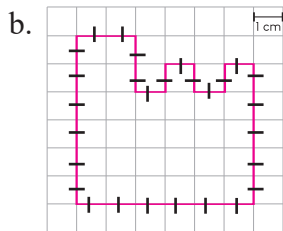
Exercise 10A

1. The perimeter of a polygon is the sum of the lengths of the line segments that enclose the figure.

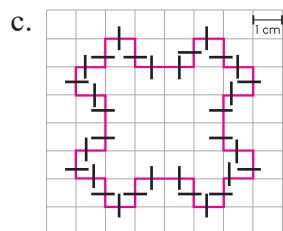




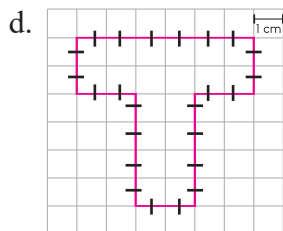
The perimeter of the figure is 24 cm.



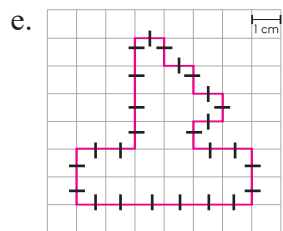
The perimeter of the figure is 28 cm.



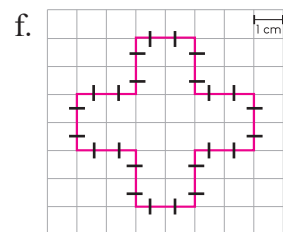
The perimeter of the figure is 32 cm.



The perimeter of the figure is 24 cm.



The perimeter of the figure is 26 cm.



The perimeter of the figure is 24 cm.

2. a. Perimeter of a closed shape = Sum of lengths of all sides
 $= 4 \text{ cm} + 6 \text{ cm} + 8 \text{ cm} = 18 \text{ cm}$

b. Perimeter = Sum of lengths of sides
 $= 4 \text{ cm} + 8 \text{ cm} + 4 \text{ cm} + 8 \text{ cm} = 24 \text{ cm}$

c. Perimeter = Sum of lengths of sides
 $= 4 \text{ cm} + 4 \text{ cm} + 4 \text{ cm} + 4 \text{ cm} = 16 \text{ cm}$

3. a. Perimeter of book = Sum of lengths of all sides of book

$$= 16 \text{ cm} + 24 \text{ cm} + 16 \text{ cm} + 24 \text{ cm} = 80 \text{ cm}$$

- b. Perimeter of wall = Sum of lengths of all sides of wall

$$= 6 \text{ m} + 4 \text{ m} + 6 \text{ m} + 4 \text{ m} = 20 \text{ m}$$

- c. Perimeter of chess = Sum of lengths of all sides of chess board

$$= 20 \text{ cm} + 20 \text{ cm} + 20 \text{ cm} + 20 \text{ cm} = 80 \text{ cm}$$

- d. Perimeter of sign board = Sum of length of all sides = $60 \text{ cm} + 60 \text{ cm} + 60 \text{ cm} = 180 \text{ cm}$

- e. Perimeter = Sum of length of all sides = $8 \text{ cm} + 12 \text{ cm} + 12 \text{ cm} = 32 \text{ cm}$

- f. Perimeter = Sum of length of all sides = $12 \text{ cm} + 8 \text{ cm} + 12 \text{ cm} + 8 \text{ cm} = 40 \text{ cm}$

4. Perimeter of the rectangle = 34 cm

Length of the rectangle = 12 cm

We know that,

$$\text{Perimeter of a rectangle} = 2 \times (\text{length} + \text{breadth})$$

$$34 = 2 \times (12 + \text{breadth})$$

$$34 \div 2 = 12 + \text{breadth}$$

$$17 = 12 + \text{breadth}$$

$$\text{Breadth} = 17 - 12 = 5 \text{ cm}$$

In a rectangle, opposite sides are equal.

So, $AD = BC = 12 \text{ cm}$ and $AB = CD = 5 \text{ cm}$.

Hence, the other sides are 12 cm, 5 cm and 5 cm.

5. We know that,

$$\text{Perimeter of a square} = 4 \times \text{side}$$

$$100 = 4 \times \text{side}$$

$$\text{Side} = 100 \div 4 = 25 \text{ m}$$

Hence, each side of the square-shaped pool is 25 m.

6. a. A square of side 6 cm.

$$\text{Perimeter of a square} = 4 \times \text{side}$$

$$= 4 \times 6$$

$$= 24 \text{ cm}$$

Hence, the perimeter is 24 cm.

- b. A rectangle with length 5 cm and breadth 3 cm.

$$\text{Perimeter of a rectangle} = 2 \times (\text{length} + \text{breadth})$$

$$= 2 \times (5 + 3)$$

$$= 2 \times 8$$

$$= 16 \text{ cm}$$

Hence, the perimeter is 16 cm.

- c. A regular pentagon with each side of 4 cm
A regular pentagon has 5 equal sides.
Perimeter of a pentagon = $5 \times \text{side}$
 $= 5 \times 4$
 $= 20 \text{ cm}$

Hence, the perimeter is 20 cm.

- d. A regular hexagon with each side of 7 cm
A regular hexagon has 6 equal sides.
Perimeter of a hexagon = $6 \times \text{side}$
 $= 6 \times 7$
 $= 42 \text{ cm}$

Hence, the perimeter is 42 cm.

7. Lace is to be put around the handkerchief. So, we have to find its perimeter.

Perimeter of a square = $4 \times \text{side}$
 $= 4 \times 11$
 $= 44 \text{ cm}$

Hence, Anu needs 44 cm of lace.

8. The fence is to be put around the field. So, we have to find its perimeter.

Perimeter of a rectangle = $2 \times (\text{length} + \text{breadth})$
 $= 2 \times (12 + 10)$
 $= 2 \times 22$
 $= 44 \text{ m}$

Hence, Hariom needs 44 m of fence.

9. The fence is to be put around the park. So, we have to find its perimeter.

Perimeter of a triangle = sum of all sides
 $= 15 \text{ m} + 18 \text{ m} + 15 \text{ m}$
 $= 48 \text{ m}$

Hence, 48 m of fence is required for the triangular park.

Exercise 10B

1. a.



i.



ii.

- b.

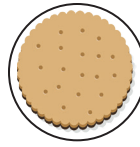


i.



ii.

- c.



i.



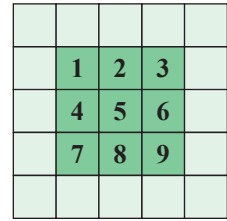
ii.

2. a.



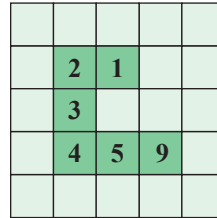
Area = 12 square cm

- b.



Area = 9 square cm

- c.



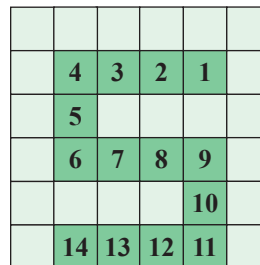
Area = 6 square cm

- d.



Area = 10 square cm

- e.



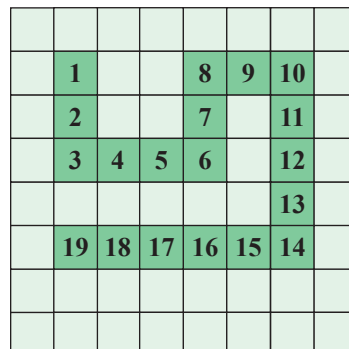
Area = 14 square cm

- f.



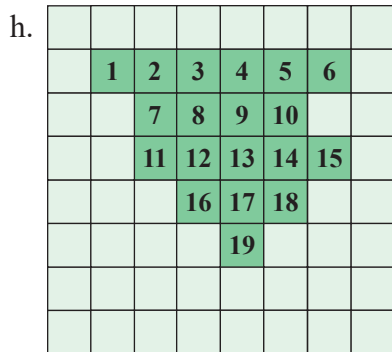
Area = 8 square cm

- g.

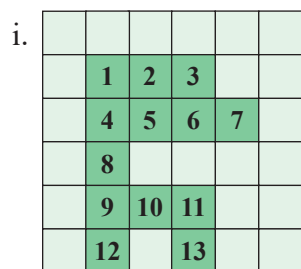


Area = 19 square cm

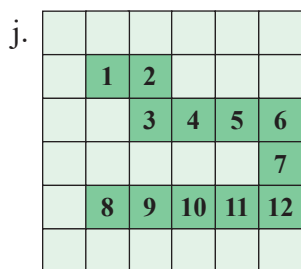




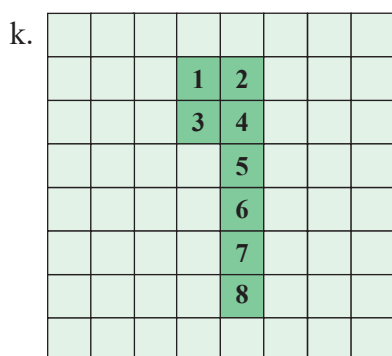
Area = 19 square cm



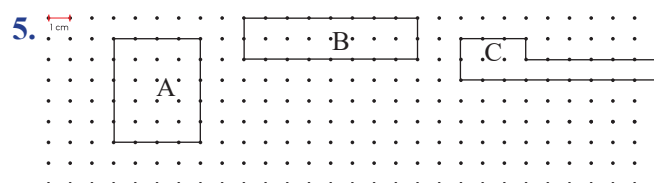
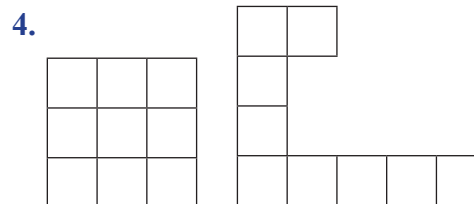
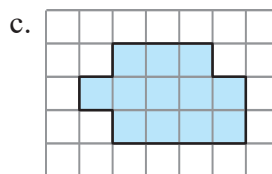
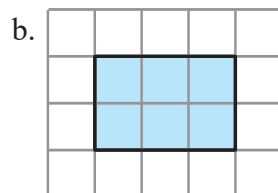
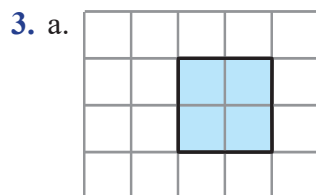
Area = 13 square cm



Area = 12 square cm



Area = 8 square cm



Area of section A = $20 + 1 = 21$ square units

Area of section B = 16 square units

Area of section C = 11 square units

Hence, all the shapes have different area.

Learning Logs

1. Length of shape A = 10 units

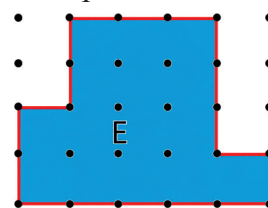
Length of shape B = 10 units

Length of shape C = 8 units

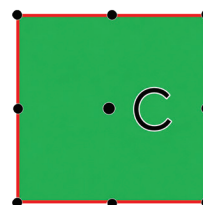
Length of shape D = 14 units

Length of shape E = 18 units

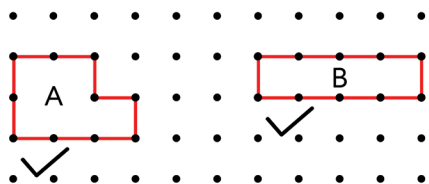
a. Longest boundary measures 18 units, and it belongs to Shape E.



b. Shortest boundary measures 8 units, and it belongs to Shape C.

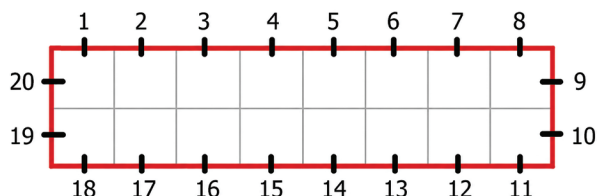


c. The shapes that have the same boundary length are A and B.



2. a. Perimeter = $5\text{ cm} + 6\text{ cm} + 8\text{ cm} = 19\text{ cm}$
 b. Perimeter = $6\text{ cm} + 6\text{ cm} + 6\text{ cm} = 18\text{ cm}$
 c. Perimeter = $9\text{ cm} + 9\text{ cm} + 7\text{ cm} = 25\text{ cm}$
 d. Perimeter = $2\text{ cm} + 10\text{ cm} + 2\text{ cm} + 10\text{ cm} = 24\text{ cm}$
 e. Perimeter = $4\text{ cm} + 4\text{ cm} + 4\text{ cm} + 4\text{ cm} = 16\text{ cm}$
 f. Perimeter = $5\text{ cm} + 5\text{ cm} + 5\text{ cm} + 5\text{ cm} = 20\text{ cm}$

3. a. Perimeter = 20 cm



Area = 16 sq. cm

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16

- b. Same as part (a).
Perimeter = 16 cm Area = 16 sq. cm
 - c. Same as part (a).
Perimeter = 12 cm Area = 6 sq. cm
 - d. Same as part (a).
Perimeter = 14 cm Area = 9 sq. cm
- 4.
 5. Length of the border = Sum of length of all sides of board
 $= 3\text{ m} + 5\text{ m} + 3\text{ m} + 5\text{ m} = 16\text{ m}$
 So, Mayank needs 16 m of black border around the entire bulletin board.

Mental Maths

1. Perimeter = Sum of length of all sides = $5\text{ cm} + 2\text{ cm} + 2\text{ cm} + 5\text{ cm} + 2\text{ cm} = 16\text{ cm}$
 Hence, the correct answer is (c).
2. Perimeter of rectangle = length + breadth + length + breadth = $13\text{ cm} + 5\text{ cm} + 13\text{ cm} + 5\text{ cm} = 36\text{ cm}$
 Hence, the correct answer is (c).
3. Perimeter of rectangular garden = $135\text{ m} + 87\text{ m} + 135\text{ m} + 87\text{ m} = 444\text{ m}$
 Hence, the correct answer is (c).
4. Perimeter of triangle = Sum of length of all sides
 $47\text{ m} = 15\text{ m} + 16\text{ m} + \text{length of third side}$
 Length of third side = $47\text{ m} - 31\text{ m} = 16\text{ m}$
 Hence, the correct answer is (b).
5. Perimeter of square = $7\text{ cm} + 7\text{ cm} + 7\text{ cm} + 7\text{ cm} = 28\text{ cm}$
 Hence, the correct answer is (a).

HOTS

1. a. b.
- c.

2. Each side of the final square is 2 cm .
 Anita folded the paper in half three times.
 So, the final square is 1 part out of 8 equal parts of the original paper.
 Area of one small square can be found by counting unit squares = $2 \times 2 = 4\text{ square cm}$
 So, area of original paper = $4 \times 8 = 32\text{ square cm}$
 Therefore, the area of the piece of paper Anita started with was 32 sq. cm .



CHAPTER 11: TIME

Warm Up

Sr. No.	Train Number	Arrival Time		Departure Time	
		Clock	Time	Clock	Time
1.	12271		7 : 30		8 : 30
2.	22423		10 : 10		11 : 10
3.	12446		6 : 50		7 : 50
4.	12259		25 min. past 11		12 : 25

Exercise 11A

1. a.  b.  c.  d.  e.  f. 
- i. 5:24 ii. 11:47 iii. 10:01 iv. 8:32 v. 11:57 vi. 7:39

2. b.



9:13

13 minutes past 9
47 minutes to 10

c.



5:18

18 minutes past 5
42 minutes to 6

d.



2:50

50 minutes past 2
10 minutes to 3

e.



7:42

42 minutes past 7
18 minutes to 8

f.



9:10

10 minutes past 9
50 minutes to 10

g.



6:37

37 minutes past 6
23 minutes to 7

h.



11:11

11 minutes past 11
49 minutes to 12

3. a.



5:57

b.



7:24

c.



4:04

d.



12:36

e.



18 minutes to 6

f.



8 minutes past 8

g.



12 minutes to 4

h.



18 minutes past 1

Exercise 11B

- The time between 12 midnight and 12 noon is expressed by a.m. The time between 12 noon and 12 midnight is expressed by p.m.
 - Saket goes to school at 7:30 a.m.
 - His father leaves for office at 9:00 a.m.
 - Saransh eats lunch at 2:15 p.m.
 - He plays at 4:30 p.m.
 - Ranjana eats dinner at 8:30 p.m.
 - Her mother goes to bed at 10:00 p.m.
- 6 o'clock in the morning a.m.
 - 11:15 at night p.m.
 - 7:10 in the evening p.m.
 - 1:30 in afternoon p.m.
 - 2:50 late at night a.m.
 - 11:55 at night p.m.
 - 5:45 in the evening p.m.
 - 6:32 in the morning a.m.
- 7:40 a.m. 1 hour before 6:40 a.m.
 - 1:00 p.m. 1 hour before 12:00 noon

- c. 12:30 a.m. 1 hour before 11:30 p.m.
 d. 12:15 p.m. 1 hour before 11:15 a.m.
 e. 5:05 p.m. 1 hour before 4:05 p.m.
 f. 2:00 a.m. 1 hour before 1:00 a.m.
4. a. 2:05 p.m. after 1 hour 3:05 p.m.
 b. 4:15 a.m. after 1 hour 5:15 a.m.
 c. 6:00 p.m. after 1 hour 7:00 p.m.
 d. 11:00 p.m. after 1 hour 12:00 midnight
 e. 8:30 a.m. after 1 hour 9:30 a.m.
 f. 5:40 p.m. after 1 hour 6:40 p.m.
5. a. The sequence increases by 2 hours.
 8:40 a.m., 10:40 a.m., 12:40 p.m., 2:40 p.m.
 b. The sequence increases by 4 hours.
 6:10 p.m., 10:10 p.m., 2:10 a.m., 6:10 a.m.

Exercise 11C

1. a. 2:15 p.m. = 14:15 hours (iii)
 b. 10:42 p.m. = 22:42 hours (iv)
 c. 3:03 p.m. = 15:03 hours (i)
 d. 9:10 a.m. = 09:10 hours (ii)
 e. 7:15 a.m. = 07:15 hours (vi)
 f. 7:15 p.m. = 19:15 hours (v)
2. a. 3:34 a.m. = 03:34 hours
 b. 4:50 p.m. = 16:50 hours
 c. 7:30 p.m. = 19:30 hours
 d. 10:00 a.m. = 10:00 hours
 e. 12 midnight = 00:00 hours
 f. 6:34 p.m. = 18:34 hours
3. a. 16:20 = 4:20 p.m.
 b. 18:57 = 6:57 p.m.
 c. 20:20 = 8:20 p.m.
 d. 04:30 = 4:30 a.m.
 e. 22:00 = 10:00 p.m.
 f. 08:08 = 8:08 a.m.
4. a. Rachna had dinner at 7:45 p.m.
 b. A bus leaves Delhi at 1:30 p.m.
 c. Anand left home at 11:25 a.m.
 d. Golu reached Agra at 8:10 p.m.
 e. A hawker starts distributing newspapers at 06:35 a.m.

Exercise 11D

1. a. From 2 o'clock to quarter past 3
 2 o'clock = 2:00

Quarter past 3 = 3:15

From 2:00 to 3:00 = 1 hour = 60 minutes

From 3:00 to 3:15 = 15 minutes

Total time passed = 60 + 15 = 75 minutes

- b. Quarter to 4 = 3:45

From 2:30 to 3:30 = 1 hour = 60 minutes

From 3:30 to 3:45 = 15 minutes

Total time passed = 60 + 15 = 75 minutes

- c. From 3:20 to 4:20 = 1 hour = 60 minutes

From 4:20 to 4:50 = 30 minutes

Total time passed = 60 + 30 = 90 minutes

- d. Quarter to 5 = 4:45

Half past 7 = 7:30

From 4:45 to 5:45 = 1 hour = 60 minutes

From 5:45 to 6:45 = 1 hour = 60 minutes

From 6:45 to 7:30 = 45 minutes

Total time passed = 60 + 60 + 45 = 165 minutes

Starting time	Duration	Finishing time
8:25 a.m.	55 min.	9:20 a.m.
12:18 p.m.	1 h 10 min.	1:28 p.m.
6:45 a.m.	2 h 32 min.	9:17 a.m.
9:09 p.m.	3 hs 25 min.	12:34 a.m.
8:55 p.m.	1 h 21 min.	10:16 p.m.

3. a. An aeroplane leaves Chennai at 7:20 a.m. and reaches Delhi at 9:05 a.m.

From 7:20 a.m. to 8:20 a.m. = 1 hour

From 8:20 a.m. to 9:05 a.m. = 45 minutes

Total time taken = 1 hour 45 minutes

So, the aeroplane takes 1 hour 45 minutes to reach Delhi.

- b. A football match started at 10:20 p.m. and ended at 12:05 a.m.

From 10:20 p.m. to 11:20 p.m. = 1 hour

From 11:20 p.m. to 12:00 midnight = 40 minutes

From 12:00 midnight to 12:05 a.m. = 5 minutes

Total time = 1 hour + 40 minutes + 5 minutes
 = 1 hour 45 minutes

So, the football match lasted for 1 hour 45 minutes.

- c. Abdul left home at 11:25 hours and reached Kareem's house at 14:45 hours.

11:25 hours = 11:25 a.m.

14:45 hours = 2:45 p.m.



- From 11:25 a.m. to 12:25 p.m. = 1 hour
 From 12:25 p.m. to 1:25 p.m. = 1 hour
 From 1:25 p.m. to 2:25 p.m. = 1 hour
 From 2:25 p.m. to 2:45 p.m. = 20 minutes
 Total time taken = 3 hours 20 minutes
 So, Abdul took 3 hours 20 minutes to reach Kareem's house.
- d. A bus leaves Delhi at 10:30 a.m. and reaches Kanpur at 6:30 p.m.
 From 10:30 a.m. to 12:30 p.m. = 2 hours
 From 12:30 p.m. to 6:30 p.m. = 6 hours
 Total time taken = 2 hours + 6 hours = 8 hours
 Therefore, the bus took 8 hours to reach Kanpur.
- e. A music show started at 12:30 p.m. and lasted till 4:15 p.m.
 From 12:30 p.m. to 3:30 p.m. = 3 hours
 From 3:30 p.m. to 4:15 p.m. = 45 minutes
 Total duration = 3 hours 45 minutes
 Thus, the duration of the music show was 3 hours 45 minutes.
- f. A milkman starts distributing milk at 6:35 a.m. and finishes at 7:30 a.m.
 From 6:35 a.m. to 7:00 a.m. = 25 minutes
 From 7:00 a.m. to 7:30 a.m. = 30 minutes
 Total time taken = 25 + 30 = 55 minutes
 Thus, the milkman took 55 minutes to complete his work.
- g. Saket started making a project at 2:30 p.m. and finished it 2 hours 50 minutes later.
 Starting time = 2:30 p.m.
 After 2 hours:
 2:30 p.m. + 2 hours = 4:30 p.m.
 After 50 minutes:
 4:30 p.m. + 50 minutes = 5:20 p.m.
 Thus, Saket finished the project at 5:20 p.m.
- h. Saurav started cricket practice at 2:15 p.m. and finished 1 hour 45 minutes later.
 Starting time = 2:15 p.m.
 After 1 hour:
 2:15 p.m. + 1 hour = 3:15 p.m.
 After 45 minutes:
 3:15 p.m. + 45 minutes = 4:00 p.m.
 So, Saurav finished cricket practice at 4:00 p.m.

Exercise 11E

2. a. April is the 4th month of the year.
 b. A leap year has 366 days.
 c. September has 30 days.
 d. Seven months have 31 days.
3. A year is a leap year if it is exactly divisible by 4.
 But, if the year is a century year like 1900 or 2000, it must be exactly divisible by 400 to be a leap year.
- a. 2004 is exactly divisible by 4.
 $2004 \div 4 = 501$
 So, 2004 is a leap year.
- b. 1984 is exactly divisible by 4.
 $1984 \div 4 = 496$
 So, 1984 is a leap year.
- c. 1994 is not exactly divisible by 4.
 $1994 \div 4 = 498 \text{ remainder } 2$
 So, 1994 is not a leap year.
- d. 1986 is not exactly divisible by 4.
 $1986 \div 4 = 496 \text{ remainder } 2$
 So, 1986 is not a leap year.
- e. 2000 is a century year because it ends in 00.
 So, it must be divisible by 400.
 $2000 \div 400 = 5$
 So, 2000 is a leap year.
- f. 2010 is not exactly divisible by 4.
 $2010 \div 4 = 502 \text{ remainder } 2$
 So, 2010 is not a leap year.
- g. 2028 is exactly divisible by 4.
 $2028 \div 4 = 507$
 So, 2028 is a leap year.
- h. 1900 is a century year because it ends in 00.
 So, it must be divisible by 400.
 $1900 \div 400 = 4 \text{ remainder } 300$
 Since 1900 is not exactly divisible by 400, 1900 is not a leap year.
- i. 2024 is exactly divisible by 4.
 $2024 \div 4 = 506$
 So, 2024 is a leap year.
- j. 2020 is exactly divisible by 4.
 $2020 \div 4 = 505$
 So, 2020 is a leap year.
4. a. March has 31 days, April has 30 days, May has 31 days and June has 30 days.

6th March to 31st March = $31 - 5 = 26$ days

1st April to 30th April = 30 days

1st May to 31st May = 31 days

1st June to 10th June = 10 days

Total number of days = $26 + 30 + 31 + 10 = 97$ days

Thus, 97 days separate their birthdays.

- b. December has 31 days.

18th December to 31st December = $31 - 17 = 14$ days

Vacation lasts for 18 days.

Remaining days = $18 - 14 = 4$ days

So, 4 more days will be counted in January.

1st January to 4th January = 4 days

Thus, the vacation ends on 4th January.

Therefore, the school will reopen on 5th January.

- c. January has 31 days, February has 28 days, March has 31 days, April has 30 days, May has 31 days and June has 30 days.

26th January to 31st January = $31 - 25 = 6$ days

1st February to 28th February = 28 days

1st March to 31st March = 31 days

1st April to 30th April = 30 days

1st May to 31st May = 31 days

1st June to 28th June = 28 days

Total number of days = $6 + 28 + 31 + 30 + 31 + 28 = 154$ days

Thus, there were 154 days between 26th January 2025 and 28th June 2025.

- d. Saransh was born on 10th June 2005.

After 12 years = 10th June 2017

After 1 month = 10th July 2017

After 5 days = 15th July 2017

Thus, Saransh became 12 years 1 month 5 days old on 15th July 2017.

- e. September has 30 days and October has 31 days.

23rd September to 30th September = $30 - 22 = 8$ days

1st October to 19th October = 19 days

Total number of days = $8 + 19 = 27$ days

Thus, the examinations continued for 27 days.

Exercise 11F

1. We know that 1 day = 24 hours

a. 3 days = $3 \times 24 = 72$ hours

b. 5 days = $5 \times 24 = 120$ hours

c. 7 days 12 hours:

7 days = $7 \times 24 = 168$ hours

168 hours + 12 hours = 180 hours

d. 9 days 9 hours:

9 days = $9 \times 24 = 216$ hours

216 hours + 9 hours = 225 hours

e. 8 days 15 hours:

8 days = $8 \times 24 = 192$ hours

192 hours + 15 hours = 207 hours

f. 6 days = $6 \times 24 = 144$ hours

g. 3 days 6 hours

3 days = $3 \times 24 = 72$ hours

72 hours + 6 hours = 78 hours

h. 2 days 18 hours

2 days = $2 \times 24 = 48$ hours

48 hours + 18 hours = 66 hours

2. We know that 1 hour = 60 minutes

a. 7 h = $7 \times 60 = 420$ minutes

b. 7 h 30 min:

7 h = $7 \times 60 = 420$ minutes

420 minutes + 30 minutes = 450 minutes

c. 4 h = $4 \times 60 = 240$ minutes

d. 8 h 15 min:

8 h = $8 \times 60 = 480$ minutes

480 minutes + 15 minutes = 495 minutes

e. 9 h 7 min:

9 h = $9 \times 60 = 540$ minutes

540 minutes + 7 minutes = 547 minutes

f. 5 h 24 min:

5 h = $5 \times 60 = 300$ minutes

300 minutes + 24 minutes = 324 minutes

g. 18 h 40 min:

18 h = $18 \times 60 = 1080$ minutes

1080 minutes + 40 minutes = 1120 minutes

h. 13 h 27 min:

13 h = $13 \times 60 = 780$ minutes

780 minutes + 27 minutes = 807 minutes

3. a. 15 min:

1 minute = 60 seconds

15 min = $15 \times 60 = 900$ seconds



- b. $20 \text{ min} = 20 \times 60 = 1200 \text{ seconds}$
 c. $8 \text{ min } 18 \text{ s}$:
 $8 \text{ min} = 8 \times 60 = 480 \text{ seconds}$
 $480 \text{ seconds} + 18 \text{ seconds} = 498 \text{ seconds}$
 d. $9 \text{ min } 10 \text{ s}$:
 $9 \text{ min} = 9 \times 60 = 540 \text{ seconds}$
 $540 \text{ seconds} + 10 \text{ seconds} = 550 \text{ seconds}$
 e. $25 \text{ min } 34 \text{ s}$:
 $25 \text{ min} = 25 \times 60 = 1500 \text{ seconds}$
 $1500 \text{ seconds} + 34 \text{ seconds} = 1534 \text{ seconds}$
 f. $18 \text{ min } 1 \text{ s}$:
 $18 \text{ min} = 18 \times 60 = 1080 \text{ seconds}$
 $1080 \text{ seconds} + 1 \text{ second} = 1081 \text{ seconds}$
 g. $7 \text{ min } 40 \text{ s}$:
 $7 \text{ min} = 7 \times 60 = 420 \text{ seconds}$
 $420 \text{ seconds} + 40 \text{ seconds} = 460 \text{ seconds}$
 h. $58 \text{ min } 12 \text{ s}$:
 $58 \text{ min} = 58 \times 60 = 3480 \text{ seconds}$
 $3480 \text{ seconds} + 12 \text{ seconds} = 3492 \text{ seconds}$

Exercise 11G

1. a. $35 \text{ min } 38 \text{ s}$ and $18 \text{ min } 17 \text{ s}$:
 Add the seconds: $38 \text{ s} + 17 \text{ s} = 55 \text{ s}$
 Add the minutes: $35 \text{ min} + 18 \text{ min} = 53 \text{ min}$
 Thus, $35 \text{ min } 38 \text{ s} + 18 \text{ min } 17 \text{ s} = 53 \text{ min } 55 \text{ s}$
 b. $24 \text{ min } 18 \text{ s}$ and $5 \text{ min } 20 \text{ s}$:
 Add the seconds: $18 \text{ s} + 20 \text{ s} = 38 \text{ s}$
 Add the minutes: $24 \text{ min} + 5 \text{ min} = 29 \text{ min}$
 Thus, $24 \text{ min } 18 \text{ s} + 5 \text{ min } 20 \text{ s} = 29 \text{ min } 38 \text{ s}$
 c. $28 \text{ min } 38 \text{ s}$ and $29 \text{ min } 40 \text{ s}$:
 Add the seconds: $38 \text{ s} + 40 \text{ s} = 78 \text{ s} = 60 \text{ s} + 18 \text{ s}$
 $= 1 \text{ min } 18 \text{ s}$
 Add the minutes: $28 \text{ min} + 29 \text{ min} = 57 \text{ min}$
 Thus, $28 \text{ min } 38 \text{ s} + 29 \text{ min } 40 \text{ s} = 58 \text{ min } 18 \text{ s}$
 d. $15 \text{ min } 30 \text{ s}$ and $30 \text{ min } 35 \text{ s}$:
 Add the seconds: $30 \text{ s} + 35 \text{ s} = 65 \text{ s} = 60 \text{ s} + 5 \text{ s} = 1 \text{ min } 5 \text{ s}$
 Add the minutes: $1 \text{ min} + 15 \text{ min} + 30 \text{ min} = 46 \text{ min}$
 Thus, $15 \text{ min } 30 \text{ s} + 30 \text{ min } 35 \text{ s} = 46 \text{ min } 5 \text{ s}$
 e. $16 \text{ h } 35 \text{ min } 10 \text{ s}$ and $25 \text{ h } 16 \text{ min } 20 \text{ s}$:
 Add the seconds: $10 \text{ s} + 20 \text{ s} = 30 \text{ s}$

Add the minutes: $35 \text{ min} + 16 \text{ min} = 51 \text{ min}$
 Add the hours: $16 \text{ h} + 25 \text{ h} = 41 \text{ h}$
 Thus, $16 \text{ h } 35 \text{ min } 10 \text{ s} + 25 \text{ h } 16 \text{ min } 20 \text{ s} = 41 \text{ h } 51 \text{ min } 30 \text{ s}$

- f. $100 \text{ h } 45 \text{ min } 56 \text{ s}$ and $5 \text{ h } 19 \text{ min } 12 \text{ s}$:
 Add the seconds: $56 \text{ s} + 12 \text{ s} = 68 \text{ s} = 60 \text{ s} + 8 \text{ s} = 1 \text{ min } 8 \text{ s}$
 Add the minutes: $1 \text{ min} + 45 \text{ min} + 19 \text{ min} = 65 \text{ min} = 60 \text{ min} + 5 \text{ min} = 1 \text{ h } 5 \text{ min}$
 Add the hours: $1 \text{ h} + 100 \text{ h} + 5 \text{ h} = 106 \text{ h}$
 Thus, $100 \text{ h } 45 \text{ min } 56 \text{ s} + 5 \text{ h } 19 \text{ min } 12 \text{ s} = 106 \text{ h } 5 \text{ min } 8 \text{ s}$

2. a. $25 \text{ h } 24 \text{ min}$ and $10 \text{ h } 9 \text{ min}$
 Subtract the minutes: $24 \text{ min} - 9 \text{ min} = 15 \text{ min}$
 Subtract the hours: $25 \text{ h} - 10 \text{ h} = 15 \text{ h}$
 Thus, $25 \text{ h } 24 \text{ min} - 10 \text{ h } 9 \text{ min} = 15 \text{ h } 15 \text{ min}$
 b. $24 \text{ h } 38 \text{ min}$ and $9 \text{ h } 40 \text{ min}$
 Since $38 \text{ min} < 40 \text{ min}$, regroup hours and minutes
 $24 \text{ h } 38 \text{ min} = 23 \text{ h } 98 \text{ min}$
 Subtract the minutes: $98 \text{ min} - 40 \text{ min} = 58 \text{ min}$
 Subtract the hours: $23 \text{ h} - 9 \text{ h} = 14 \text{ h}$
 Thus, $24 \text{ h } 38 \text{ min} - 9 \text{ h } 40 \text{ min} = 14 \text{ h } 58 \text{ min}$
 c. $10 \text{ min } 6 \text{ s}$ and $5 \text{ min } 26 \text{ s}$
 Since $6 \text{ s} < 26 \text{ s}$, regroup minutes and seconds.
 $10 \text{ min } 6 \text{ s} = 9 \text{ min } 66 \text{ s}$
 Subtract the Seconds: $66 \text{ s} - 26 \text{ s} = 40 \text{ s}$
 Subtract the minutes: $9 \text{ min} - 5 \text{ min} = 4 \text{ min}$
 Thus, $10 \text{ min } 6 \text{ s} - 5 \text{ min } 26 \text{ s} = 4 \text{ min } 40 \text{ s}$
 d. $24 \text{ h } 40 \text{ min } 10 \text{ s}$ and $4 \text{ h } 56 \text{ min } 16 \text{ s}$
 Since $10 \text{ s} < 16 \text{ s}$, regroup minutes and seconds.
 $24 \text{ h } 40 \text{ min } 10 \text{ s} = 24 \text{ h } 39 \text{ min } 70 \text{ s}$
 Now, since $39 \text{ min} < 56 \text{ min}$, regroup hours and minutes.
 $24 \text{ h } 39 \text{ min } 70 \text{ s} = 23 \text{ h } 99 \text{ min } 70 \text{ s}$
 Subtract the seconds: $70 \text{ s} - 16 \text{ s} = 54 \text{ s}$
 Subtract the minutes: $99 \text{ min} - 56 \text{ min} = 43 \text{ min}$
 Subtract the hours: $23 \text{ h} - 4 \text{ h} = 19 \text{ h}$
 Thus, $24 \text{ h } 40 \text{ min } 10 \text{ s} - 4 \text{ h } 56 \text{ min } 16 \text{ s} = 19 \text{ h } 43 \text{ min } 54 \text{ s}$



3. 15 h 20 min + 13 h 54 min:

Add the minutes: $20 \text{ min} + 54 \text{ min} = 74 \text{ min} = 60 \text{ min} + 14 \text{ min} = 15 \text{ h } 14 \text{ min}$

Add the hours: $1 \text{ h} + 15 \text{ h} + 13 \text{ h} = 29 \text{ h}$

$15 \text{ h } 20 \text{ min} + 13 \text{ h } 54 \text{ min} = 29 \text{ h } 14 \text{ min}$

Thus, Ram travelled for 29 hours 14 minutes.

4. 42 min 12 s + 53 min 28 s:

Add the seconds: $12 \text{ s} + 28 \text{ s} = 40 \text{ s}$

Add the minutes: $42 \text{ min } 53 \text{ min} = 95 \text{ min} = 60 \text{ min} + 35 \text{ min} = 1 \text{ h } 35 \text{ min}$

$42 \text{ min } 12 \text{ s} + 53 \text{ min } 28 \text{ s} = 1 \text{ h } 35 \text{ min } 40 \text{ s}$

Thus, Nitu's lunch will be ready in 1 hour 35 minutes 40 seconds

5. Time taken by Putul to complete the work

= 55 min 20 s

Time taken by Ajay to complete the work

= 1 h 10 min 20 s = 70 min 20 s

Ajay takes a longer time.

Now, find the difference.

$70 \text{ min } 20 \text{ s} - 55 \text{ min } 20 \text{ s}$

Subtract the seconds: $20 \text{ s} - 20 \text{ s} = 0 \text{ s}$

Subtract the minutes: $70 \text{ min} - 55 \text{ min} = 15 \text{ min}$

Thus, $70 \text{ min } 20 \text{ s} - 55 \text{ min } 20 \text{ s} = 15 \text{ min}$

Ajay takes a longer time by 15 minutes.

Learning Logs

1. a. I get out of bed at 6:00 a.m.

b. The sun sets at 6:50 p.m.

c. Raman goes to school at 7:30 a.m.

d. I go to bed at 9:30 p.m.

2. a. 21:10 hours = 9:10 p.m.

b. 7:36 p.m. = 19:36 hours

c. 9:23 a.m. = 09:23 hours

d. 00:00 hours = 12:00 a.m.

e. 16:00 hours = 4:00 p.m.

f. 2:00 p.m. = 14:00 hours

3. a. b. c. d.

e. f. g. h. i. j.

4. a. 8 h 15 min + 16 h 43 min:

Add the minutes: $15 \text{ min} + 43 \text{ min} = 58 \text{ min}$

Add the hours: $8 \text{ h} + 16 \text{ h} = 24 \text{ h}$

Thus, $8 \text{ h } 15 \text{ min} + 16 \text{ h } 43 \text{ min} = 24 \text{ h } 58 \text{ min}$

b. 15 min 39 s + 18 min 24 s + 9 min 13 s:

Add the second: $39 \text{ s} + 24 \text{ s} + 13 \text{ s} = 76 \text{ s}$

= $60 \text{ s} + 16 \text{ s} = 1 \text{ min } 16 \text{ s}$

Add the minutes: $1 \text{ min} + 15 \text{ min} + 18 \text{ min} + 9 \text{ min} = 43 \text{ min}$

Thus, $15 \text{ min } 39 \text{ s} + 18 \text{ min } 24 \text{ s} + 9 \text{ min } 13 \text{ s} = 43 \text{ min } 16 \text{ s}$

c. 18 h 42 min + 19 h 32 min:

Add the minutes: $42 \text{ min} + 32 \text{ min} = 74 \text{ min} = 60 \text{ min} + 14 \text{ min} = 1 \text{ h } 14 \text{ min}$

Add the hours: $1 \text{ h} + 18 \text{ h} + 19 \text{ h} = 38 \text{ h}$

Thus, $18 \text{ h } 42 \text{ min} + 19 \text{ h } 32 \text{ min} = 38 \text{ h } 14 \text{ min}$

d. 16 h 8 min 21 s + 12 h 12 min 12 s

Add the seconds: $21 \text{ s} + 12 \text{ s} = 33 \text{ s}$

Add the minutes: $8 \text{ min} + 12 \text{ min} = 20 \text{ min}$

Add the hours: $16 \text{ h} + 12 \text{ h} = 28 \text{ h}$

Thus, $16 \text{ h } 8 \text{ min } 21 \text{ s} + 12 \text{ h } 12 \text{ min } 12 \text{ s} = 28 \text{ h } 20 \text{ min } 33 \text{ s}$

5. a. 6 h 28 min from 9 h 17 min:

Since $17 \text{ min} < 28 \text{ min}$, regroup hours and minutes.

$9 \text{ h } 17 \text{ min} = 8 \text{ h } 77 \text{ min}$

Subtract the minutes: $77 \text{ min} - 28 \text{ min} = 49 \text{ min}$

Subtract the hours: $8 \text{ h} - 6 \text{ h} = 2 \text{ h}$

Thus, $9 \text{ h } 17 \text{ min} - 6 \text{ h } 28 \text{ min} = 2 \text{ h } 49 \text{ min}$

b. 21 min 19 s from 40 min:

$40 \text{ min} = 40 \text{ min } 0 \text{ s}$

$0 \text{ s} < 19 \text{ s}$, regroup minutes and seconds.

$40 \text{ min } 0 \text{ s} = 39 \text{ min } 60 \text{ s}$

Subtract the seconds: $60 \text{ s} - 19 \text{ s} = 41 \text{ s}$

Subtract the min: $39 \text{ min} - 21 \text{ min} = 18 \text{ min}$

Thus, $40 \text{ min} - 21 \text{ min } 19 \text{ s} = 18 \text{ min } 41 \text{ s}$



c. 24 s from 1 min:

$$1 \text{ min} = 60 \text{ s}$$

$$\text{Now, } 60 \text{ s} - 24 \text{ s} = 36 \text{ s}$$

$$\text{Thus, } 1 \text{ min} - 24 \text{ s} = 36 \text{ s}$$

d. 58 min from 1 hour:

$$1 \text{ hour} = 60 \text{ min}$$

$$60 \text{ min} - 58 \text{ min} = 2 \text{ min}$$

$$\text{Thus, } 1 \text{ hour} - 58 \text{ min} = 2 \text{ min}$$

6. a. Starting time = 6:15 p.m.

$$\text{Time spent} = 3 \text{ h } 15 \text{ min}$$

Add the hours and minutes.

$$6:15 \text{ p.m.} + 3 \text{ h} = 9:15 \text{ p.m.}$$

$$9:15 \text{ p.m.} + 15 \text{ min} = 9:30 \text{ p.m.}$$

Thus, Geeta returned at 9:30 p.m.

b. Total time taken for breakfast, lunch and dinner.

$$25 \text{ min} + 30 \text{ min} + 24 \text{ min} = 79 \text{ min}$$

$$79 \text{ min} = 60 \text{ min} + 19 \text{ min}$$

$$= 1 \text{ h } 19 \text{ min}$$

Thus, Jaspreet spends 1 h 19 min on eating.

c. Starting time = 3:50 p.m.

$$\text{Playing time} = 1 \text{ h } 40 \text{ min}$$

Add the hours and minutes.

$$3:50 \text{ p.m.} + 1 \text{ h} = 4:50 \text{ p.m.}$$

$$4:50 \text{ p.m.} + 40 \text{ min} = 5:30 \text{ p.m.}$$

Thus, Anita should return at 5:30 p.m.

d. May has 31 days, June has 30 days and July has 31 days.

$$17\text{th May to } 31\text{st May} = 31 - 16 = 15 \text{ days}$$

$$1\text{st June to } 30\text{th June} = 30 \text{ days}$$

$$1\text{st July to } 12\text{th July} = 12 \text{ days}$$

$$\text{Total number of days} = 15 + 30 + 12 = 57 \text{ days}$$

Thus, Rohan's family spent 57 days on the trip.

Mental Maths

1. 8 hours 50 minutes

$$= 8 \times 60 \text{ minutes} + 50 \text{ minutes} = 480 \text{ minutes} + 50 \text{ minutes} = 530 \text{ minutes}$$

Hence, the correct answer is (c).

2. 1 hour = 60 minutes

$$1 \text{ minute} = 60 \text{ seconds}$$

$$1 \text{ hour} = 60 \text{ minutes} = 60 \times 60 \text{ seconds} = 3600 \text{ seconds}$$

Hence, the correct answer is (d).

3. 1 day = 24 hours

$$1 \text{ hour} = 60 \text{ minutes}$$

$$1 \text{ day} = 24 \text{ hours} = 24 \times 60 \text{ minutes}$$

Hence, the correct answer is (b).

4. Second hand moves the fastest in a clock.

Hence, the correct answer is (c).

5. 8 days 8 hours = $8 \times 24 \text{ hours} + 8 \text{ hours} = 192 \text{ hours} + 8 \text{ hours} = 200 \text{ hours}$

Hence, the correct answer is (a).

6. 3 hours 30 minutes before 12 noon.

$$12:00 - 3 \text{ hours } 30 \text{ minutes} = 8:30 \text{ a.m.}$$

Hence, the correct answer is (a).

HOTS

Team A:

$$\begin{aligned} \text{Total time: } & 1 \text{ h } 45 \text{ min } 10 \text{ s} + 2 \text{ h } 14 \text{ min } 53 \text{ s} \\ &= (1 \text{ h} + 2 \text{ h}) + (45 \text{ min} + 14 \text{ min}) + (10 \text{ s} + 53 \text{ s}) \\ & 3 \text{ h} + 59 \text{ min} + (1 \text{ min } 3 \text{ s}) = 3 \text{ h} + 60 \text{ min} + 3 \text{ s} = \\ & 4 \text{ h } 3 \text{ s} \end{aligned}$$

Team B:

$$\begin{aligned} \text{Total time: } & 1 \text{ h } 55 \text{ min } 19 \text{ s} + 2 \text{ h } 15 \text{ min } 10 \text{ s} \\ &= (1 \text{ h} + 2 \text{ h}) + (55 \text{ min} + 15 \text{ min}) + (19 \text{ s} + 10 \text{ s}) \\ & 3 \text{ h} + 70 \text{ min} + 29 \text{ s} = 4 \text{ h} + 10 \text{ min} + 29 \text{ s} \\ &= 4 \text{ h } 10 \text{ min } 29 \text{ s} \end{aligned}$$

Team C:

$$\begin{aligned} \text{Total time: } & 2 \text{ h } 39 \text{ min } 10 \text{ s} + 2 \text{ h } 55 \text{ min } 19 \text{ s} \\ &= (2 \text{ h} + 2 \text{ h}) + (39 \text{ min} + 55 \text{ min}) + (10 \text{ s} + 19 \text{ s}) \\ & 4 \text{ h} + 94 \text{ min} + 29 \text{ s} = 5 \text{ h} + 34 \text{ min} + 29 \text{ s} \\ &= 5 \text{ h } 34 \text{ min } 29 \text{ s} \end{aligned}$$

Team D:

$$\begin{aligned} \text{Total time: } & 1 \text{ h } 49 \text{ min } 36 \text{ s} + 2 \text{ h } 10 \text{ min } 26 \text{ s} \\ &= (1 \text{ h} + 2 \text{ h}) + (49 \text{ min} + 10 \text{ min}) + (36 \text{ s} + 26 \text{ s}) \\ & 3 \text{ h} + 59 \text{ min} + (1 \text{ min } 2 \text{ s}) = 3 \text{ h} + 60 \text{ min} + 2 \text{ s} \\ &= 4 \text{ h } 2 \text{ s} \end{aligned}$$

Arrange the total time in ascending order:

$$4 \text{ h } 2 \text{ s}, 4 \text{ h } 3 \text{ s}, 4 \text{ h } 10 \text{ min } 29 \text{ s}, 5 \text{ h } 34 \text{ min } 29 \text{ s}$$

Thus, the rank of team: Team D, Team A, Team B, Team C.

CHAPTER 12: MONEY

Warm Up

1. Week	Ruchira's savings	Rohit's savings
Week - 1	$\text{₹}2 + \text{₹}5 + \text{₹}10 + \text{₹}10 + \text{₹}10 + \text{₹}5 + \text{₹}20 = \text{₹}62$	$\text{₹}10 + \text{₹}10 + \text{₹}5 + \text{₹}2 + \text{₹}1 + \text{₹}1 + \text{₹}1 + \text{₹}1 + \text{₹}20 = \text{₹}51$
Week - 2	$\text{₹}1 + \text{₹}10 + \text{₹}10 + \text{₹}5 + \text{₹}5 + \text{₹}5 = \text{₹}36$	$\text{₹}10 + \text{₹}10 + \text{₹}10 + \text{₹}10 = \text{₹}40$
Week - 3	$\text{₹}5 + \text{₹}5 + \text{₹}5 + \text{₹}2 + \text{₹}2 + \text{₹}2 + \text{₹}1 + \text{₹}20 + \text{₹}10 + \text{₹}10 = \text{₹}72$	$\text{₹}2 + \text{₹}2 + \text{₹}10 + \text{₹}10 + \text{₹}10 + \text{₹}1 + \text{₹}1 + \text{₹}20 + \text{₹}20 = \text{₹}76$
Week - 4	$\text{₹}1 + \text{₹}1 + \text{₹}20 + \text{₹}20 = \text{₹}42$	$\text{₹}20 + \text{₹}20 + \text{₹}20 + \text{₹}5 + \text{₹}5 + \text{₹}10 = \text{₹}80$
Total	$\text{₹}62 + \text{₹}36 + \text{₹}72 + \text{₹}42 = \text{₹}212$	$\text{₹}51 + \text{₹}40 + \text{₹}76 + \text{₹}80 = \text{₹}247$

1. Ruchira saves ₹62 in the first week.
2. In week - 4 Rohit saves most money.
3. Rohit saves more money in all.
4. ₹200 note

Exercise 12A

1. Cost of cap = ₹128
Cost of gloves = ₹85
Total cost = ₹128 + ₹85 = ₹213
Thus, Sumit purchased cap and gloves.
2. Cost of socks = ₹50
Cost of muffler = ₹150
Cost of jacket = ₹450
Total cost = ₹50 + ₹150 + ₹450 = ₹650
Thus, Jimmy bought socks, muffler and jacket.
3. Cost of one muffler = ₹150
Cost of three mufflers = ₹150 + ₹150 + ₹150 = ₹450
Thus, Jatin bought mufflers.
4. Cost of jacket = ₹450
Cost of muffler = ₹150
Total cost = ₹450 + ₹150 = ₹600
Thus, Riya bought jacket and muffler.

5. Cost of one vest = ₹80
Cost of two vests = ₹80 + ₹80 = ₹160
Total amount paid = ₹210
Cost of the other item = ₹210 - ₹160 = ₹50
The item that costs ₹50 is socks.
Thus, the other item he bought was socks.
6. Cost of one pair of socks = ₹50
Cost of three pairs of socks = ₹50 + ₹50 + ₹50 = ₹150
Total amount paid = ₹260
Cost of the other item = ₹260 - ₹150 = ₹110
The item that costs ₹110 is pajama.
Thus, Seema bought socks and pajama.

Exercise 12B

1. Cost of pencil = ₹7
Cost of eraser = ₹5
Cost of iron scale = ₹18
Total amount paid = ₹7 + ₹5 + ₹18 = ₹30
Thus, Sumit paid ₹30 to the shopkeeper.
2. Amount received by Ruby = ₹8505
Amount received by her sister = ₹8070
Difference = ₹8505 - ₹8070 = ₹435
Thus, Ruby received ₹435 more than her sister.
3. Cost of biscuits = ₹65
Cost of bread = ₹45
Cost of toffees = ₹85
Total cost = ₹65 + ₹45 + ₹85 = ₹195
Amount given to shopkeeper = ₹200
Money she got back = ₹200 - ₹195 = ₹5
Thus, Alka got back ₹5.
4. Cost of shirt = ₹1663
Cost of trousers = ₹1462
Cost of socks = ₹78
Total cost = ₹1663 + ₹1462 + ₹78 = ₹3203
Amount given = ₹3500
Money she got back = ₹3500 - ₹3203 = ₹297
Thus, Reena got back ₹297.
5. Cost of 1 kg wheat = ₹32
Cost of 12 kg wheat = ₹32 × 12 = ₹384
Thus, the cost of 12 kg wheat is ₹384.
6. Cost of 1 ceiling fan = ₹1050
Cost of 15 ceiling fans = ₹1050 × 15 = ₹15750
Thus, the cost of 15 such fans is ₹15750.



7. Cost of 1 bicycle = ₹3875
Cost of 22 bicycles = ₹3875 × 22 = ₹85250
Thus, the cost of 22 such bicycles is ₹85250.
8. 1 week = 7 days
Pocket money for 7 days = ₹350
Pocket money for 1 day = ₹350 ÷ 7 = ₹50
Thus, Mona gets ₹50 daily.
9. Cost of 12 books = ₹1020
Cost of 1 book = ₹1020 ÷ 12 = ₹85
Thus, the cost of one book is ₹85.
10. Amount given = ₹200
Amount returned = ₹50
Cost of 10 kg potatoes = ₹200 – ₹50 = ₹150
Cost of 1 kg potatoes = ₹150 ÷ 10 = ₹15
Thus, the cost of 1 kg potatoes is ₹15.
11. 1 dozen = 12 items
Cost of 1 notebook = ₹40
Cost of 12 notebooks = ₹40 × 12 = ₹480
Amount given = ₹500
Money he will get back = ₹500 – ₹480 = ₹20
Thus, Naman will get back ₹20.
12. Total expenditure = ₹6140
Number of children = 5
Share of each child = ₹6140 ÷ 5 = ₹1228
Thus, the share of each child was ₹1228.

Exercise 12 C

1. New Paper Mart Aya Nagar, Agra Name and Address: _____				Date _____ Bill No. 125
Sr. No.	Items	Quantity	Rate (₹)	Amount (₹)
1.	Notebook	6	55	330
2.	Files	8	25	8 × 25 = 200
3.	Pens	2	120 ÷ 2 = 60	120
4.	Pencils	12	5	12 × 5 = 60
Total				710

2. a. Gayatri had ₹500 to spend.

Item	Quantity	Rate	Amount
Potato	1 kg	₹18 per kg	₹18
Beetroot	1 kg	₹60 per kg	₹60
Tomato	2 kg	₹35 per kg	₹70
Total			₹148

Total amount spent = ₹148
Amount left = ₹500 – ₹148 = ₹352
Thus, Gayatri spent ₹148 and had left ₹352 left.

- b. Suman had ₹350 to spend.

Item	Quantity	Rate	Amount
Carrot	1 kg	₹40 per kg	₹40
Tomato	2 kg	₹35 per kg	₹70
Brinjal	1 kg	₹25 per kg	₹25
Total			₹135

Total amount spent = ₹135
Amount left = ₹350 – ₹135 = ₹215
Thus, Mukesh spent ₹135 and had left ₹215 left.

- c. Mukesh had ₹200 to spend.

Item	Quantity	Rate	Amount
Cucumber	1 kg	₹15 per kg	₹15
Beetroot	2 kg	₹60 per kg	₹120
Cauliflower	1 kg	₹35 per kg	₹35
Total			₹170

Total amount spent = ₹170
Amount left = ₹200 – ₹170 = ₹30
Thus, Mukesh spent ₹170 and had left ₹30 left.

Learning Logs

1. a.



Total amount = ₹5 + ₹5 + ₹5 + ₹5 + ₹200
+ ₹100 + ₹100 + ₹100 = ₹520

- b.



Total amount = ₹20 + ₹20 + ₹20 + ₹10 + ₹10
+ ₹10 + ₹10 + ₹10 + ₹500 = ₹610

2. Cost of a bedsheet = ₹535

Cost of two pillow covers = ₹200

Cost of a towel = ₹105

Total cost = 535 + 200 + 105 = ₹840

So, Mrs. Savita spent ₹840 in total.

3. Cost of a bat = ₹1,250
 Cost of a ball = ₹260
 Cost of a pair of gloves = ₹409
 Total spent = $1250 + 260 + 409 = ₹1,919$
 Money given = ₹2,000
 Change returned = $2000 - 1919 = ₹81$
 So, Akash spent ₹1,919 in all and received ₹81 back.
4. Hotel charges = ₹4,820
 Transport charges = ₹3,000
 Food charges = ₹1,850
 Total cost altogether = $₹4820 + ₹3000 + ₹1850 = ₹9,670$
 Discount = ₹500
 Total amount paid = $₹9670 - ₹500 = ₹9,170$
 So, Mr Mahesh paid ₹9,170 in total.
5. Cost of 1 ribbon = ₹48
 Number of ribbons = 9
 Total cost = $9 \times ₹48 = ₹432$
 Money given to the shopkeeper = ₹500
 Change = $₹500 - ₹432 = ₹68$
 So, she got ₹68 back.
6. Total earning = ₹1,856
 Cost of 1 ball = ₹64
 Number of balls sold = $₹1856 \div ₹64 = 29$ balls
 So, Vinod sold 29 balls.
7. Number of pens in 1 packet = 25
 Cost of 1 pen = ₹30
 Price of 1 packet = $25 \times ₹30 = ₹750$
 So, one packet costs ₹750.
8. Price of 1 dozen calculators = ₹3,000
 1 dozen = 12 calculators
 Price of 1 calculator = $3000 \div 12 = ₹250$
9. a. Deepti's order
 Pineapple ice cream: $2 \times ₹60 = ₹120$
 Almond Praline: $1 \times ₹70 = ₹70$
 Strawberry ice cream: $3 \times ₹80 = ₹240$
 Butterscotch: $1 \times ₹100 = ₹100$
 Total = $₹120 + ₹70 + ₹240 + ₹100 = ₹530$
 So, Deepti's total bill is ₹530.
- b. Chaya's order
 Chocolate: $1 \times ₹55 = ₹55$
 Tuti frutti: $3 \times ₹75 = ₹225$

Vanilla Sugar free: $2 \times ₹90 = ₹180$
 Pineapple: $1 \times ₹60 = ₹60$
 Butterscotch: $2 \times ₹100 = ₹200$
 Total = $₹55 + ₹225 + ₹180 + ₹60 + ₹200 = ₹720$
 So, Chaya's total bill is ₹720.

Mental Maths

1. $₹5 + ₹10 + ₹20 + ₹10 + ₹20 + ₹2 + ₹1 = ₹68$
 Hence, the correct answer is (c).
2. $₹625 = \underline{\hspace{2cm}} + ₹140 + ₹85$
 $₹625 = \underline{\hspace{2cm}} + ₹225$
 $\underline{\hspace{2cm}} = ₹625 - ₹225 = ₹400$
 Hence, the correct answer is (d).
3. $₹100 \div 10 = 10$
 There are ten 10-rupee notes, which make ₹100.
 Hence, the correct answer is (c).
4. $₹1000 \div 20 = 50$
 There are fifty 20-rupee notes, which make ₹1000.
 Hence, the correct answer is (b).

HOTS

Cost of headphones = ₹1,550
 Cost of power bank = ₹1,030
 Since the discount is given on the second item, we consider the power bank as the second item.
 Discount on second item = ₹225
 Total cost of both items = $₹1550 + ₹1030 = ₹2580$
 Discounted price = Total cost – discount
 $= ₹2580 - ₹225 = ₹2355$
 So, Dolly needs to pay ₹2355 for both items.

CHAPTER 13: DATA HANDLING

Warm Up

1. Save the Environment Projects of Class 4

Project Topics	Tall Marks	Number of Students
Save Water		13
Save Trees		8
Save Energy		14
Reduce Pollution		9
Use Public Transport		5
Total		49



- There are 49 students in the class.
- Save Energy is the most popular topic among the students.
- Use Public Transport is the least popular topic among the students.
- 13 students chose the topic "Save Water".
- Number of students who chose the topic Reduce Pollution = 9 and number of students who chose the topic "Use Public Transport" = 5
Difference = $9 - 5 = 4$.

Exercise 13A

- To represent the above data pictorially, we choose a ball as a symbol.

Let the symbol of one ball represent 6 students.
We shall draw $(36 \div 6) = 6$ balls for Football, $(42 \div 6) = 7$ balls for Cricket, $(60 \div 6) = 10$ balls for Badminton, $(12 \div 6) = 2$ balls for Volleyball, $(30 \div 6) = 5$ balls for Basketball.

Thus, we have the following pictograph.

Football	
Cricket	
Badminton	
Volleyball	
Basketball	
Key  = 6 students	

- To represent the above data pictorially, we choose a bottle as a symbol.

Let the symbol of one bottle represent 5 bottles.
We shall draw $(30 \div 5) = 6$ bottles for Brand A, $(35 \div 5) = 7$ bottles for Brand B, $(45 \div 5) = 9$ bottles for Brand, and so on.

Thus, we have the following pictograph:

A	
B	
C	
D	
E	
Key  = 5 bottles	

- To represent the above data pictorially, we choose a star as a symbol.

Let the symbol of one star represent 10 transport.
We shall draw $(60 \div 10) = 6$ stars for Bus, $(20 \div 10) = 2$ stars for Metro, $(30 \div 10) = 3$ stars for walking, and so on.

Thus, we have the following pictograph:

Bus	
Metro	
Walking	
Motorcycle	
Bicycle	
Key  = 10	

- From the pictograph (1 ★ = 1 student):

Cartoons = 8 students

Comedy = 6 students

Sports = 4 students

Knowledge = 4 students

- Cartoons (8 students) is the most popular category.

- Total students = $8 + 6 + 4 + 4 = 22$ students

- There are no two categories with the same number of students.

- (1  = 10 students)

From the pictograph:

Comic = $6 \times 10 = 60$ students

Story = $9 \times 10 = 90$ students

Novel = $10 \times 10 = 100$ students

Magazine = $4 \times 10 = 40$ students

Poetry = $4 \times 10 = 40$ students

- Total students = $60 + 90 + 100 + 40 + 40$
= 330 students

- $100 - 90 = 10$ students

- Novel

- (1  symbol = 15 trees)

From the pictograph:

Mango = $4 \times 15 = 60$ trees

Apple = $6 \times 15 = 90$ trees

Guava = $10 \times 15 = 150$ trees

Orange = $8 \times 15 = 120$ trees

Pear = $5 \times 15 = 75$ trees

- $60 + 90 + 150 + 120 + 75 = 495$ trees
- 120 trees
- $90 - 60 = 30$ trees
- Mango and apples trees = $60 + 90 = 150$ trees

Exercise 13B

- From the given bar graph the number of students who would like to visit planets of our solar system.

Mercury = 8 students

Venus = 6 students

Mars = 16 students

Jupiter = 12 students

Saturn = 14 students

Uranus = 12 students

Neptune = 2 students

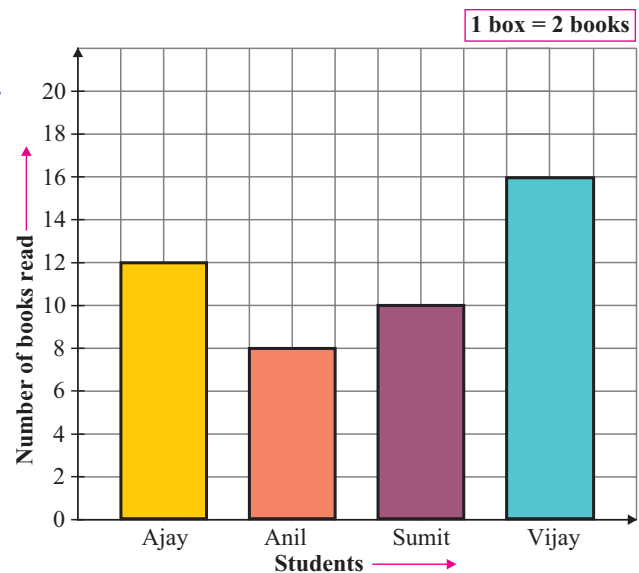
- Mars has the highest number, so Mars is the most popular planet.
- 14 students like to visit Saturn.
- Number of students who prefer Mars = 16
Number of students who prefer Mercury = 8
Difference = $16 - 8 = 8$ students
- Three least popular planets:
Neptune = 2, Venus = 6, Mercury = 8
Total = $2 + 6 + 8 = 16$
Mars = 16
Since $16 = 16$, the statement is false.
- From the given bar graph Jupiter and Uranus has same number of students.

- Topping and their values:

Tomato = 50, Pepper = 125, Onion = 200, Pepperoni = 325, Bacon = 150, Mushroom = 250

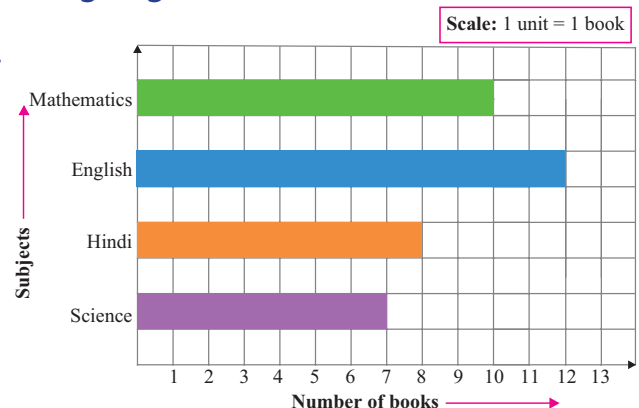
- Highest value: Pepperoni = 325
So, the most popular topping is Pepperoni.
- Tomato = 50, Pepper = 125
Total = $50 + 125 = 175$
- Lowest value: Tomato = 50
So, the least popular topping is Tomato.
- Mushroom = 250
Onion = 200
Difference = $250 - 200 = 50$
- $50 + 125 + 200 + 325 + 150 + 250 = 1100$
So, the total number of pizzas sold = 1100.

3.



Learning Logs

1.



- Number of kites in each category:

- Red = 7 symbols = $7 \times 4 = 28$ kites
- Black = 4 symbols = $4 \times 4 = 16$ kites
- Blue = 6 symbols = $6 \times 4 = 24$ kites
- Pink = 2 symbols = $2 \times 4 = 8$ kites
- Green = 4 symbols = $4 \times 4 = 16$ kites
- Other = 3 symbols = $3 \times 4 = 12$ kites

- Pink = $2 \times 4 = 8$ kites
- Red kites were sold in the largest number by the shopkeeper.
- Pink kites were sold in the least number by the shopkeeper
- Total number of kites sold = $28 + 16 + 24 + 8 + 16 + 12 = 104$.

- Number of students who went to visit the zoo class-wise:

Class I = 15 students, Class II = 10 students,

Class III = 30 students,

Class IV = 40 students, Class V = 25 students.



- Total number of students went to the zoo = $15 + 10 + 30 + 40 + 25 = 120$ students.
- Class IV
- Class less than 40: Class I (15 students), Class II (10 students), Class III (30 students), Class V (25 students).
- 25 students of class V went to the zoo.
- Total number of students = 120
Number of students in each bus = 30
Number of buses = $120 \div 30 = 4$

Mental Maths

- The information collected in numeric form is called data.
Hence, the correct option is (c).
- The representation of data in pictures are used is called a pictograph.
Hence, the correct option is (a).
- The height of each bar in a bar graph represents a number.
Hence, the correct option is (a).

HOTS

From the given bar graph.

Half-yearly marks:

Maths = 90, Science = 80, S.St. = 70, English = 60, Hindi = 70

Annual marks:

Maths = 80, Science = 80, S.St. = 90, English = 50, Hindi = 50

Total Marks: Maths = $90 + 80 = 170$, Science = $80 + 80 = 160$, S.St. = $70 + 90 = 160$, English = $60 + 50 = 110$, Hindi = $70 + 50 = 120$

- Highest marks = 170 (Math)
 - Lowest value = 110 (English)
 - Same marks in Science and S.St.
- Total score = $170 + 160 + 160 + 110 + 120 = 720$

MODEL TEST PAPER – 2

- Rectangle, circle and square are all symmetrical shapes.
So, the correct answer is (d).

- A kite has 1 line of symmetry.
So, the correct answer is (a).
- Perimeter of rectangle = $7 + 4 + 7 + 4 = 22$ cm
So, the correct answer is (b).
- A pencil is measured in centimetres.
So, the correct answer is (b).
- 1 day = 24 hours
 $3 \text{ days} = 3 \times 24 = 72$ hours.
So, the correct answer is (c).
- Time duration from 9:25 to 10:45:
 $10:45 - 9:25 = 1 \text{ hour } 20 \text{ minutes.}$
So, the correct answer is (b).
- Total money = ₹500
Cost of each toy = ₹120
Cost of 3 toys = $3 \times ₹120 = ₹360$
Amount left = $₹500 - ₹360 = ₹140$
So, the correct answer is (d).
- Weight of fruits is measured in grams.
So, the correct answer is (c).
- Given pattern: 5, 10, 15, 20, _____
Pattern increase by 5, so the next number is $20 + 5 = 25$
So, the correct answer is (c).
- A cube is a 3D shape.
So, the correct answer is (c).
- A fixed length → Line segment
 - One end point → Ray
 - Exact location without length and breadth → Point
 - No end points → Line
- Name → Square
Sides → AB, BC, CD, DA
Vertices → A, B, C, D
 - Name → Hexagon
Sides → AB, BC, CD, DE, EF, FA
Vertices → A, B, C, D, E, F
 - Name → Octagon
Sides → LM, MS, ST, TU, UV, VW, WX, XL
Vertices → L, M, S, T, U, V, W, X
 - Name → Pentagon
Sides → HG, GK, KJ, JI, IH
Vertices → H, G, K, J, I
- A cylinder has 2 edges
 - A cone has 1 edge and 2 faces.

- c. A sphere has 1 curved face.
d. A cuboid has 12 edges, 8 vertices and 6 faces
e. A cube has 6 faces

16. a. 19, 16, 13, 10, 7, 4
Subtract 3 each time, next two numbers are $10 - 3 = 7$ and $7 - 3 = 4$
So, the required numbers are 7 and 4.
b. 4, 8, 16, 32, 64, 128
Multiply by 2 each time, next two numbers are $32 \times 2 = 64$ and $64 \times 2 = 128$
So, the required numbers are 64 and 128.
c. 21, 18, 14, 11, 7, 4
Pattern: $-3, -4, -3$ repeating
So, the next two numbers are $11 - 4 = 7$ and $7 - 3 = 4$
So, the required numbers are 7 and 4.
d. 1, 2, 4, 7, 11, 16
Pattern: $+1, +2, +3, +4, +5$
So, the next two numbers are $7 + 4 = 11$ and $11 + 5 = 16$
So, the required numbers are 11 and 16.

17. a. $12 \text{ m} = 12 \times 100 \text{ cm} = 1200 \text{ cm}$
b. $7 \text{ m } 36 \text{ cm} = 7 \text{ m} + 36 \text{ cm} = (7 \times 100) \text{ cm} + 36 \text{ cm} = 700 \text{ cm} + 36 \text{ cm} = 736 \text{ cm}$
c. $6 \text{ km } 652 \text{ m} = (6 \times 1000) \text{ m} + 652 \text{ m} = 6000 \text{ m} + 652 \text{ m} = 6652 \text{ m}$
d. $52 \text{ cm } 2 \text{ mm} = (52 \times 10) \text{ mm} + 2 \text{ mm} = 520 \text{ mm} + 2 \text{ mm} = 522 \text{ mm}$
e. $87 \text{ mm} = 80 \text{ mm} + 7 \text{ mm} = (80 \div 10) \text{ cm} + 7 \text{ mm} = 8 \text{ cm } 7 \text{ mm}$
f. $5 \text{ g} = (5 \times 1000) \text{ mg} = 5000 \text{ mg}$
g. $6 \text{ kg } 375 \text{ g} = 6 \text{ kg} + 375 \text{ g} = (6 \times 1000) \text{ g} + 375 \text{ g} = 6000 \text{ g} + 375 \text{ g} = 6375 \text{ g}$
h. $14045 \text{ g} = 14000 \text{ g} + 45 \text{ g} = (14000 \div 1000) \text{ kg} + 45 \text{ g} = 14 \text{ kg } 45 \text{ g}$
i. $15 \text{ L} = (15 \times 1000) \text{ mL} = 15000 \text{ mL}$
j. $4005 \text{ mL} = 4000 \text{ mL} + 5 \text{ mL} = (4000 \div 1000) \text{ L} + 5 \text{ mL} = 4 \text{ L } 5 \text{ mL}$

18. Painting A:
Perimeter = $(6 + 4 + 6 + 4) \text{ cm} = 20 \text{ cm}$
Painting B:
Perimeter = $(10 + 3 + 10 + 3) \text{ cm} = 26 \text{ cm}$
Ribbon available = 22 cm

Painting A fits ($20 < 22$) as it can cover completely.
Painting B does not fit ($26 > 22$) as it cannot cover completely.

Thus, painting A should be preferred.

19. a. Total time: $40 \text{ min} + 35 \text{ min} = 75 \text{ min} = 1 \text{ h } 15 \text{ min}$
Thus, the total journey takes 1 h 15 min.
b. Journey time: 8:00 a.m. to 2:40 p.m.
 $8:00 \text{ a.m. to } 12:00 \text{ noon} = 4 \text{ hours}$
 $12:00 \text{ noon to } 2:40 \text{ p.m.} = 2 \text{ hours } 40 \text{ minutes}$
Total time = $4 \text{ hours} + 2 \text{ hours } 40 \text{ minutes} = 6 \text{ h } 40 \text{ min}$
c. Cost of 2 water bottles = $\text{₹}80 \times 2 = \text{₹}160$
Cost of toy = ₹70
Cost of ice-cream = ₹15
Total cost = $\text{₹}160 + \text{₹}70 + \text{₹}15 = \text{₹}245$
Money given = ₹500
Change = $\text{₹}500 - \text{₹}245 = \text{₹}255$
Total amount paid = ₹245
Amount returned = ₹255

20. Pictograph showing number of toys sold by a toy shop in a week.

Key 🧸 = 5 toys

Toys	Number
Car	🧸🧸🧸🧸🧸🧸🧸🧸🧸🧸
Robot	🧸🧸🧸🧸🧸🧸🧸🧸
Soft Toy	🧸🧸🧸🧸
Aeroplane	🧸🧸🧸🧸🧸🧸🧸🧸🧸🧸🧸🧸
Doll	🧸🧸🧸🧸🧸

OR

Bar graph:

