ANSWERS

Part-1

Chapter 1: A square and A cube

Let's Recall

1. (*a*) 44, 58, 74 (*b*) 27, 32, 37
2. 30 3. 19, 37

Fast Check (Page 10)

1. 1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30, 60; Not a square number
2. 1, 3, 9, 27, 81; Square number
3. 1, 2, 3, 4, 6, 8, 12, 16, 24, 32, 48, 96; Not a square number

Fast Check (Page 11)

1. 25, 36, 49 2. 81

Practice Time 1A

1. (*a*) No, as one 3 cannot be paired.
   (*b*) Yes, as all prime factors can be paired.
   (*c*) No, as one factor 5 cannot be paired.
   (*d*) Yes, as all prime factors can be paired.
2. (*a*) 38 (*b*) 39 (*c*) 45 (*d*) 56
3. 3 4. 2 5. 900 6. 3600
7. 2025, $3^2 \times 3^2 \times 5^2$

Fast Check (Page 14)

(*c*)

Think Tank (Page 18)

1. 4444488889, 666667^2, $6666667^2 = 44444448888889$
2. 1002001, 1000002000001

Practice Time 1B

1. (*a*) 4 (*b*) 9 (*c*) 4 (*d*) 1
2. (*a*) A perfect sqaure
   (*b*) Not a perfect square because it ends in 3.
   (*c*) Not a perfect square because it ends in 8.
   (*d*) Not a perfect square because it ends in 2.
3. (*a*), (c)
4. (*a*) 36 (*b*) 121 (*c*) 231
5. (*a*) 1 + 3 + 5 + 7
   (*b*) 1 + 3 + 5 + 7 + 9 + 11
   (*c*) 1 + 3 + 5 + 7 + 9 + 11 + 13 + 15 + 17 + 19 + 21
   (*d*) 1 + 3 + 5 + 7 + 9 + 11 + 13 + 15 + 17 + 19 + 21 + 23
6. (*a*) 180 + 181 (*b*) 312 + 313 (*c*) 220 + 221 (*d*) 264 + 265
7. (*a*) $16^2 - 1$ (*b*) $37^2 - 1$ (*c*) $44^2 - 1$ (*d*) $59^2 - 1$
8. $6^2 + 7^2 + 42^2 = 43^2$, $7^2 + 8^2 + 56^2 = 57^2$, $8^2 + 9^2 + 72^2 = 73^2$
9. 841
10. (*a*) 95 (*b*) 49 (c) 183 (*d*) 283
    (*e*) 359 (*f*) 511

Fast Check (Page 20)

1. 3364 2. 5329

Practice Time 1C

1. (*a*) Yes (*b*) No (*c*) Yes (*d*) No
2. (*a*) 1225 (*b*) 11236 (*c*) 441 (*d*) 5625
   (*e*) 2401 (*f*) 8464 (*g*) 11025 (*h*) 9604
3. (*a*) 1089 (*b*) 9409 (*c*) 6561 (*d*) 3969
   (*e*) 5184 (*f*) 6241 (*g*) 2025 (*h*) 7921
4. (*a*) 676 (*b*) 3481 (*c*) 7744 (*d*) 8649
   (*e*) 17424 (*f*) 105625 (*g*) 191844 (*h*) 962361

Fast Check (Page 27)

9801

Practice Time 1D

1. (*a*) 1 digit (*b*) 2 digits (*c*) 2 digits (*d*) 3 digits
   (*e*) 3 digits (*f*) 3 digits (*g*) 2 digits (*h*) 3 digits
2. (*a*) 1 or 9 (*b*) 3 or 7 (*c*) 2 or 8 (*d*) 5
   (*e*) 5 (*f*) 3 or 7 (*g*) 2 or 8 (*h*) 4 or 6
3. (*a*) 11 (*b*) 12 (*c*) 15 (*d*) 19
4. (*a*) 75 (*b*) 84 (*c*) 51 (*d*) 32
5. (*a*) 3, 48 (*b*) 7, 105 (*c*) 3, 78 (*d*) 2, 80
6. (*a*) 11, 6 (*b*) 5, 23 (*c*) 5, 36 (*d*) 6, 38
7. 84 m
8. (*a*) 98 (*b*) 85 (*c*) 207 (*d*) 309
9. (*a*) 69, 41 (*b*) 61, 42 (*c*) 12, 80 (*d*) 75, 625
10. (*a*) 39, 21 (*b*) 36, 45 (*c*) 114, 58 (*d*) 102, 99
11. 1,00,04,569 and 9,99,80,001 12. 99,856; 316
13. 91 14. 16
15. (*a*) 32 (*b*) 39 (*c*) 49 (*d*) 71

Think Tank (Page 29)

64

Fast Check (Page 30)

No

Fast Check (Page 31)

No

Think Tank (Page 32)

10

Practice Time 1E

1. (*a*) 2197 (*b*) 2,87,496 (*c*) –3375 (*d*) 195.112
   (*e*) 1030.301 (*f*) $\frac{27}{2744}$ (*g*) $\frac{125}{1331}$ (*h*) 64 or 2^6
2. (*a*) Yes (*b*) No (*c*) Yes (*d*) Yes
   (*e*) No (*f*) Yes (*g*) Yes (*h*) Yes
3. (*a*) Even (*b*) Odd (c) Even (*d*) Even
   (*e*) Odd (*f*) Odd (*g*) Even (*h*) Odd
4. (*a*) 5 (*b*) 0 (*c*) 9 (*d*) 2
   (*e*) 7 (*f*) 8 (*g*) 4 (*h*) 1
5. $22^3 = 10648$ (Even), $36^3 = 46656$ (Even) (Answer may vary)
6. $21^3 = 9261$ (Odd), $35^3 = 42875$ (Odd) (Answer may vary)
7. (*a*) No (*b*) Yes, 10 (*c*) Yes, 13 (*d*) Yes, 18
   (*e*) Yes, 20 (*f*) Yes, 22 (*g*) No (*h*) Yes, 50
8. (*a*) 3 (*b*) 4 (*c*) 3 (*d*) 7
9. (*a*) 5 (*b*) 2 (*c*) 2 (*d*) 4
10. (*a*) 18961 (*b*) 30301

Practice Time 1F

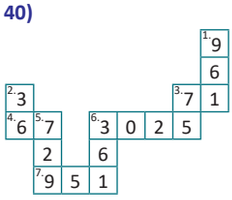
1. (*a*) 14 (*b*) –19 (*c*) 51
2. (*a*) 45 (*b*) 73 (*c*) 84
3. (*a*) 6 (*b*) 9 (*c*) 12
4. (*a*) $\frac{9}{10}$ (*b*) $\frac{5}{8}$ (*c*) 72 (*d*) 234
5. (*a*) –72 (*b*) $\frac{-11}{16}$ (c) $\frac{5}{7}$ (d) 1.5
6. 3.2 metres
7. $\frac{29}{6}$ metres or 4.83 metres 8. 14, 28 and 42

Challenge Question (Page 40)

1. Yes; 16, 9, 7, 2, 14, 11, 5, 4, 12, 13, 3, 6, 10, 15, 1, 8, 17 (Answer may vary)
2. 0.3, 0.45 and 0.6
3. (Answer may vary)

$$(9) + (16) = (25)$$
$$(36) + (49) = (4) + (81)$$
$$(1) + (8) + (27) + (64) = (100)$$

Create and Solve (Page 40)



Chapter Assessment

A. **1.** (*a*) **2.** (*d*) **3.** (*b*) **4.** (*a*) **5.** (*b*)
B. **1.** (*a*) **2.** (*a*) **3.** (*b*) **4.** (*a*)
C. **1.** negative **2.** triplets **3.** even
4. 2, 3, 7 and 8 **5.** never end
D. **1.** F **2.** T **3.** F **4.** T **5.** T **6.** T
E. **1.** 155
2. (*a*) $\frac{156}{11}$ (*b*) 10.8 **3.** 6 **4.** 2, 23
5. $\frac{15}{4}$ metres **6.** 12 **7.** 12
8. 12 and 21; and 102 and 201 (Answer may vary) **9.** 900
10. 79 students **11.** 41 **12.** 7.2 **13.** 900 coins
14. 8836

Mental Maths (Page 43)

1. 21 **2.** 103 **3.** 6 **4.** 21
5. 4 **6.** –90 **7.** 7

Chapter 2: Power Play

Let's Recall

1. 100,000 cm
2. (*a*) 225 (*b*) 441 (*c*) 729 (*d*) 1521
3. (*a*) 1331 (*b*) 9261 (*c*) 4096 (*d*) 1728
4. 22 m

Think Tank (Page 47)

(*e*) $2^{15}x$

Practice Time 2A

1. (*a*) 2^6 (*b*) 3^3b^5 (*c*) a^3b^4 (*d*) ab^3c^4
(*e*) x^2y^5 (*f*) $p^4q^3s^2$ (*g*) $3^2\times5^5$ (*h*) $2\times5^3\times11^4$
(*i*) $2^3\times3^2\times5^2\times7$ (*j*) $11^6\times7^2$
2. (*a*) $2^2\times3^2$ (*b*) 2^6 (*c*) 5^4 (*d*) $2^2\times3^4$
(*e*) $3^4\times5$ (*f*) $2^2\times3^3\times5$ (*g*) $2^4\times3^2\times5^2$ (*h*) 2^{12}
(*i*) $2^4\times5^2$ (*j*) $3^4\times5^2$ (*k*) $2^6\times7^2$ (*l*) $3^3\times5^3$
3. (*a*) 13^{12} (*b*) $\left(\frac{17}{29}\right)^{10}$ (*c*) $\left(\frac{7}{9}\right)^{11}$ (*d*) $3^6\times5$
(*e*) $3^4\times5^5$ (*f*) $(-2)^8\times3^2$
4. (*a*) $\frac{4}{25}$ (*b*) $\frac{27}{125}$ (*c*) $\frac{256}{625}$ (*d*) $\frac{243}{16807}$
(*e*) $\frac{1}{1296}$ (*f*) $-\frac{8}{125}$
5. (*a*) 2^{-5} (*b*) $\left(\frac{3}{5}\right)^3$ (*c*) 2^{-10} (*d*) $\left(\frac{2}{5}\right)^4$
(*e*) $\left(\frac{2}{3}\right)^5$ (*f*) 2^{-12}
6. 3^5 **7.** 2^8
8. (*a*) 3^2 (*b*) 2^5 (*c*) 2^8 (*d*) 3^5
(*e*) 2^{15} (*f*) 3^4
9. $a^3b^2 = a\times a\times a\times b\times b$; $a^2b^3 = a\times a\times b\times b\times b$; $b^2a^3 = b\times b\times a\times a\times a$; $b^3a^2 = b\times b\times b\times a\times a$; No, all are not the same.
10. (*a*) 200000 (*b*) 784 (*c*) 360 (*d*) 1000
(*e*) 144 (*f*) 9000

Think Tank (Page 51)

(*c*) Day 19

Think Tank (Page 53)

Because dividing a number by 0 is not defined.

Fast Check (Page 55)

$5^4 = 625$, $5^0 = 1$, $5^{-1} = \frac{1}{5}$, $5^{-2} = \frac{1}{25}$, $5^{-3} = \frac{1}{125}$. $5^{-4} = \frac{1}{625}$

Practice Time 2B

1. 1000 **2.** 12 **3.** 4 **4.** 108 **5.** 20
6. (*a*) 1000100000 (*b*) $\frac{27}{8}$ (*c*) 4 (*d*) $\frac{36}{7}$
7. (*a*) T (*b*) F (*c*) F (*d*) F (*e*) F (*f*) T
8. (*a*) $49a^2b^3$ (*b*) $\frac{1120}{3}$ (*c*) 729 (*d*) $\frac{1}{75}$ (*e*) $\frac{1}{57600}$
(*f*) $\frac{2}{3}$ (*g*) $144a$ (*h*) $\frac{15625}{46656}$
9. $-\frac{2}{3}$ **10.** $\left(\frac{3}{4}\right)^3$ **11.** 8
12. (*a*) $\frac{3}{2}$ (*b*) $\frac{1}{2}$ (*c*) $\frac{1}{2}$ (*d*) 2
13. (*a*) –2 (*b*) 2 (*c*) $\frac{5}{2}$

Practice Time 2C

1. (*a*) 5^6 (*b*) 5^3 (*c*) 5^3 (*d*) 5^7
(*e*) 5^2 (*f*) 5^7 (*g*) 5^{-1} (*h*) 5^{-1}
(*i*) 5^4 (*j*) 5^{-2}
2. (*a*) 5.736×10^1 (*b*) 3.458×10^6 (*c*) 2.73×10^4 (*d*) 1.68×10^5
(*e*) 3.0269×10^4 (*f*) 2.67×10^{-3} (*g*) 2.34789×10^2 (*h*) 8.92×10^{-7}
(*i*) 2.349×10^{-1} (*j*) 3.03882×10^2
3. (*a*) 0.00002089 (*b*) 0.0000000000006823
(*c*) 0.000041278 (*d*) 0.000000187
(*e*) 0.00005673 (*f*) 0.000000532
(*g*) 2389000 (*h*) 4654
(*i*) 0.00789
4. 5.913×10^{12} m **5.** 1.0×10^{-8} g **6.** 2.75×10^{13}
8. 1.49216×10^8 km
9. 1.00008×10^2 mm
11. (*a*) Starlings: 1.3×10^9, Humans: 8.2×10^8, Ants: 2.0×10^{16}
(*b*) $\approx2.44\times10^6$ ants per human (*c*) 1.3×10^5
12. 6.34×10^{15} years **13.** 1.98×10^{15} years
14. (*a*) ₹700 (*b*) ₹800 (*c*) ₹875 (*d*) ₹200 more

Mental Maths (Page 65)

1. –1260 **2.** 48 **3.** $x = 2$ **4.** $x = 12$
5. 4.1856×10^4 **6.** $x = 4$

Challenge Question (Page 66)

1. 103 **2.** 6 **3.** $\frac{7}{6}$ **4.** 676000

Chapter Assessment

A. **1.** (*c*) **2.** (*b*) **3.** (*d*) **4.** (*b*) **5.** (*c*) **6.** (*d*)
7. (*d*) **8.** (*d*) **9.** (*d*)
B. **1.** (*a*) **2.** (*b*)
C. **1.** –1 **2.** $\frac{1}{16}$ **3.** 64 **4.** $\frac{1}{64}$ **5.** 6.4×10^{-7}
6. 0.0000505
D. **1.** F **2.** T **3.** T **4.** F **5.** F
E. **1.** 1 **2.** 29 **3.** 4 **4.** $\frac{1}{36}$ **5.** $3m - 3n = 2$
6. (*a*), (c), and (*d*) **7.** 1.90597×10^{27} kg **8.** 5040
9. 336 **10.** 8 **11.** 30 **12.** 7^6 **13.** 3.72×10^7
14. (*a*) 1.082×10^8 km (*b*) 6.0518×10^6 m
(*c*) 5.41×10^3 hours (*d*) 3.67×10^2 seconds

Chapter 3: A Story of Numbers

Let's Recall

1. (*a*) **2.** (*d*) **3.** (*a*) **4.** (*a*)

Fast Check (Page 76)

1. CXXIII **2.** DXXXVI

Practice Time 3A

1. (*a*) ukasar-ukasar-ukasar-urapon
(*b*) ukasar-ukasar-ukasar-ukasar-ukasar-ukasar
(*c*) ukasar-ukasar-ukasar-ukasar-ukasar-urapon
(*d*) ukasar-ukasar-ukasar-ukasar-urapon
2. (*a*) ukasar-ukasar-ukasar-ukasar-ukasar-ukasar-urapon
(*b*) ukasar-ukasar-ukasar-ukasar-ukasar-ukasar-ukasar
(*c*) ukasar-urapon
(*d*) ukasar-ukasar

(*e*) ukasar-ukasar
(*f*) ukasar-ukasar-ukasar
(*g*) ukasar-urapon

3. (*a*) okosa-okosa-okosa-okosa-okosa-urapun
(*b*) okosa-okosa-okosa-okosa-okosa-okosa-urapun
(*c*) okosa-okosa-okosa
(*d*) (okosa-okosa-okosa-urapun) – (okosa-urapun)

4. (*a*) MMCCCXLV (*b*) V̄MMCCCIX (*c*) V̄MDXLIX (*d*) MMMCDIX

5. (*a*) 45 (*b*) 63 (*c*) 76 (*d*) 92
(*e*) 1666 (*f*) 260 (*g*) 708 (*h*) 340

6. (*a*) < (*b*) > (*c*) > (*d*) >
(*e*) < (*f*) > (*g*) > (*h*) <

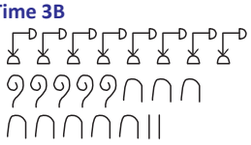
7. XXVII; DCCLIX; CM; MCD; MDC

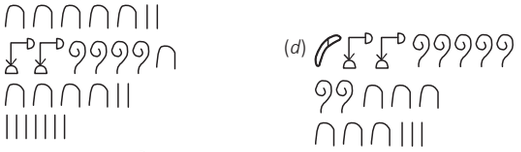
8. (*a*) XXVII (*b*) CLXXXI (*c*) LXIII (*d*) CDXC
(*e*) MCD (*f*) CCX

9. X – 10, XLI – 41, XXIX – 29, C – 100

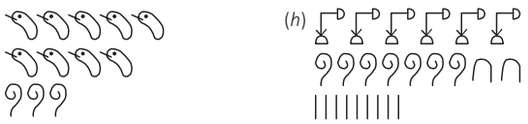
10. (*a*) X (*b*) CLXII (*c*) CCCXCIX (*d*) CCXLVII
(*e*) XXVII (*f*) LX

Practice Time 3B

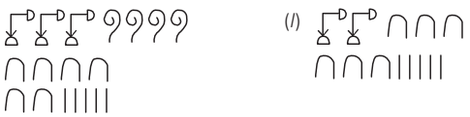
1. (*a*)  (*b*) 

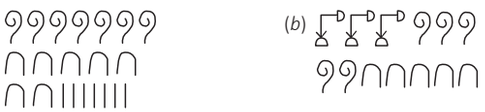
(*c*) (*d*) 

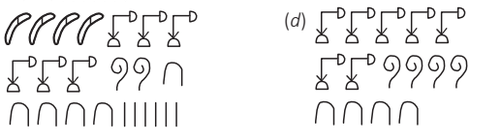
(*e*)  (*f*)

(*g*) (*h*) 

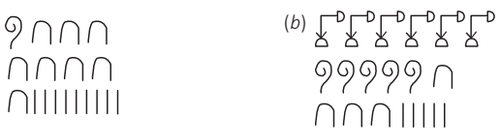
(*i*) (*j*) 

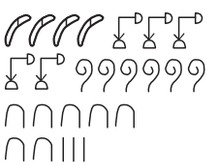
(*k*) (*l*) 

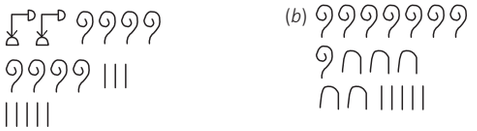
2. (*a*) (*b*) 

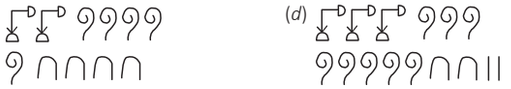
(*c*) (*d*) 

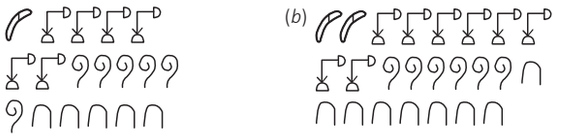
(*e*) 

3. (*a*) (*b*) 

(*c*)  (*d*)

4. (*a*)  (*b*) 

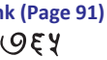
(*c*)  (*d*) 

5. (*a*) (*b*) 

(*c*)  (*d*) 

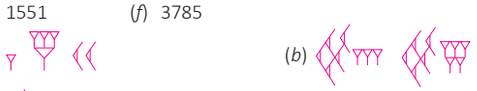
6. (*a*) 30542 (*b*) 5180 (*c*) 95759

Think Tank (Page 91)

1.  **2.** **3.** **4.**

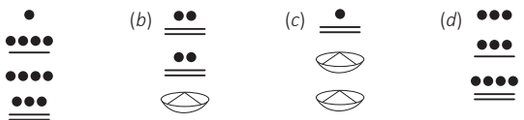
Practice Time 3C

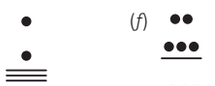
1. (*a*) 4205 (*b*) 100 (*c*) 2184003 (*d*) 163600
(*e*) 1551 (*f*) 3785

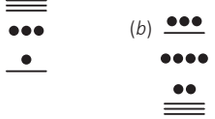
2. (*a*) (*b*) 

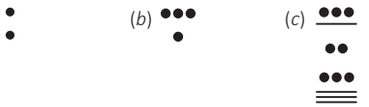
(*c*) 

3. (*a*) 73 (*b*) 6492 (*c*) 1442 (*d*) 3255

4. (*a*) (*b*) (*c*) (*d*) 

(*e*) (*f*)  (*g*) (*h*) 

5. (*a*) (*b*)  (*c*)

6. (*a*) (*b*) (*c*) 

7. (*a*) 75169 (*b*) 76528 (*c*) 67

8. (*a*) (*b*) 

(*c*) (*d*) 

9. (*a*) (*b*) (*c*) 

(*d*) 

Mental Maths (Page 94)

1. (*a*) 723 (*b*) 6561 (*c*) 681 (*d*) 108545

2. (*a*) (*b*) C (*c*) 

Chapter Assessment

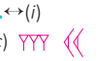
A. **1.** (*a*) **2.** (*d*) **3.** (*a*) **4.** (*b*)

B. **1.** (*a*) **2.** (*c*) **3.** (*d*)

C. **1.** zero **2.** Liber Abaci **3.** 12 **4.** tally
5. two

D. **1.** T **2.** F **3.** F **4.** F

E. **1.** ↔(*iii*) **2.**↔(*iv*) **3.**↔(*i*) **4.**↔(*ii*)

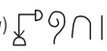
F. **1.** (*a*)  (*b*)  (*c*) 

(*d*) 

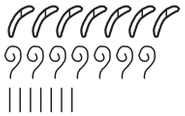
2. (*a*)  (*b*)  (*c*)  (*d*) 

3. (*a*) 236 (*b*) 3040 (*c*) 7577 (*d*) 10577

4. MCCXXII (*b*) MMMCDLVI (*c*) MMMXXIX (*d*) DCCXV

5. (*a*) 

(*b*) 

(*c*)  (*d*) 

6. (*a*)  (*b*)  (*c*)  (*d*) 

7. (*a*)  (*b*)  (*c*)  (*d*) 

8. (*a*)  (*b*)  (*c*)  (*d*) 

9. (*a*) 

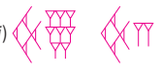
(*b*) 

(*c*) 

(*d*) 

10. (*a*)(*i*)  (*ii*)  (*iii*)  (*iv*) 

(*v*) (*vi*) 

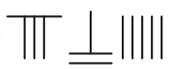
(*b*) (*i*)  (*ii*) 

(*iii*)  (*iv*) 

(*v*)  (*vi*) 

(*c*) (*i*)  (*ii*) 

(*iii*)  (*iv*) 

(*v*)  (*vi*) 

(*d*) (*i*) MMCMXXXII (*ii*) $\overline{\text{IX}}$CCCXCVII

(*iii*) XLVI (*iv*) DCCLXXXII (*v*) v (*vi*) DCCCLXXV

Chapter 4: Quadrilaterals

Let's Recall

1. Closed curve: (*b*), (*d*) and (*e*)
Open curve: (*a*), (*c*)

2. (*a*) Equilateral triangle (*b*) Isosceles triangle
(*c*) Scalene triangle

3. (*a*) Acute-angled triangle (*b*) Right-angled triangle
(*c*) Obtuse-angled triangle

Practice Time 4A

1. ∠EAR = 30° and ∠RAD = 60°

2. (*a*) ∠OBA = 30°, ∠AOB = 120°, ∠BOC = 60°, ∠OBC = 60°, ∠OCB = 60°, ∠COD = 120°, ∠OCD = 30°, ∠ODC = 30°, ∠AOD = 60°, ∠ADO = 60° and ∠OAD = 60°
(*b*) ∠OQR = 35°, ∠ORQ = 35°, ∠POQ = 70°, ∠OPQ = 55°, ∠OQP = 55°, ∠POS = 110°, ∠OPS = 35°, ∠OSP = 35°, ∠SOR = 70°, ∠OSR = 55°, ∠ORS = 55°

3. $y = 3$ **4.** 18 cm **5.** 50°

Think Tank (Page 108)

No

Think Tank (Page 109)

1. No **2.** No **3.** Yes **4.** No

Fast Check (Page 110)

1. ∠E = 120°, ∠F = 60°, ∠G = 120° **2.** 72°, 108°, 72°, 108°

Think Tank (Page 110)

Yes

Practice Time 4B

1. 8 cm **2.** 70°

3. ∠AOD = 90°, ∠OAD = 54°, ∠ODA = 36°

4. $y = 2$ **5.** 60°, 120°, 60°, 120° **6.** 50°

7. $x = 5$, $y = 12$, $z = 13$, perimeter = 52 units

8. ∠AME = 20° ∠AEM = 20°

9. (*a*) $x = 6$ cm and $y = 9$ cm (*b*) $x = 3$ cm, $y = 13$ cm

10. 16 cm

Practice Time 4C

1. Trapezium

2. ∠A = 108°, ∠B = 80°, ∠C = 100°, ∠D = 72°

3. 60°

4. Yes, since both BD and CD are equal to the same segment FE, they must be equal to each other.

5. Sides: 5 cm, 5 cm, 5 cm and 5 cm; Angles: 60°, 120°, 60° and 120°

Chapter Assessment

A. **1.** (*a*) **2.** (*c*) **3.** (*b*) **4.** (*d*)
5. (*a*) **6.** (*a*) **7.** (*a*) **8.** (*d*)
9. (*a*) **10.** (*c*)

B. **1.** (*a*) **2.** (*d*) **3.** (*a*)

C. **1.** F **2.** T **3.** T **4.** F **5.** F **6.** T
7. T **8.** T

D. **2.** DL = MC = 3 cm **3.** $x = 36°$, $y = 60°$, $z = 84°$
4. 40° **5.** (*a*) 50° (*b*) 3
8. (*a*) 3; Rectangle, kite, and parallelogram
(*b*) Parallelogram (*c*) Kite

Challenge Question (Page 121)

1. ACBD is a rectangle

2. ∠P = 86°, ∠Q = 94°, ∠R = 94°, ∠S = 80°; Isosceles trapezium

Puzzle (Page 122)

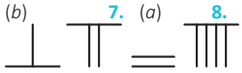
1. Kite **2.** Square **3.** Parallelogram
4. Trapezium

Mental Maths (Page 122)

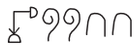
1. 3 **2.** 360°
3. No, rhombus also has equal sidelenths.
4. Kite

Unit Test – 1

A. **1.** (*d*) **2.** (*d*) **3.** (*a*) **4.** (*b*) **5.** (*c*)
6. (*b*) **7.** (*a*) **8.** (*c*) **9.** (*a*) **10.** (*a*)

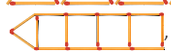
B. **1.**  **2.** 6 **3.** 20047
4. 12 **5.** 1

C. **1.** T **2.** F **3.** T **4.** T **5.** T

D. **1.** 1024, 9801 **2.** 42 **3.** No, 36 **4.** 919
6. A = 32, B = $\frac{8}{3}$, C= $\frac{8}{27}$ **7.** 49°, 131°, 49°, 131°
8. 

Chapter 5: Number Play

Let's Recall

1. (*b*)
2. Even: 234, 456, 900, 1248, 1002; Odd: 341, 787, 789, 125, 999, 10003
3. (*c*)
4. (*a*)  , 3*n*
(*b*)  , 3*n* + 3 or 3(*n* + 1)

Fast Check (Page 127)

1. 820 **2.** 1055 **3.** 10

Think Tank (Page 128)

1. No; the powers of 2 (1, 2, 4, 8, 16, 32, ...) cannot be written as the sum of consecutive numbers.
2. Several numbers; 9, 15, 21, 25, etc. **3.** No
4. For 0, we use a sequence of consecutive integers centred at zero. –1 + 0 + 1 = 0

Practice Time 5A

1. (*a*) 465 (*b*) 64 (*c*) 90 (*d*) 1010 (*e*) 3675
2. (*a*) even (*b*) even (*c*) odd (*d*) even (*e*) odd
(*f*) even (*g*) even (*h*) odd (*i*) odd (*j*) even
3. (*b*) $2s - 6t$ (*h*) $2y^2 + 4$
4. (*d*) 2N – 4 (*e*) $N^2 - N$
5. Yes, 2 × 6 = 12 **6.** Yes, 4 + 5 = 9 **7.** 12 + 14 + 16 + 18 = 60
8. $x - 1$, $x + 1$
9. 36 **10.** $\frac{S}{5} + 2$ **11.** $q + 1$, $q + 2$, $q + 3$

Fast Check (Page 135)

$4x + 3$

Practice Time 5B

1. 17 + 23 = 40, which is divisible by 4.
2. 2 in each case
3. (*a*) 82, 85, 88, 91, 94
(*b*) 18, 43, 58, 73, 88, 93 (Answer may vary)
4. 2, 7, 12, 17, 22, 27, 32, 37, 42, 47 **5.** Yes
6. (*a*) 3 (*b*) 2 (c) 1
7. 2 **8.** 119 eggs
9. 13, 28, 43, 58, 73; $15x - 2$
10. (*a*) Never True (*b*) Always True (*c*) Sometimes True
(*d*) Sometimes True (*e*) Always True

Fast Check (Page 136)

1. Yes **2.** Yes **3.** No **4.** Yes

Think Tank (Page 137)

1, 6

Think Tank (Page 139)

Yes, if the number contains a 0 or 9, it can be deleted.

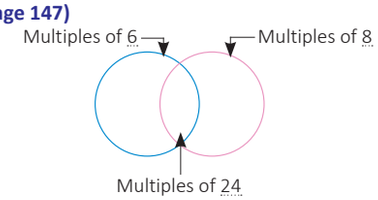
Fast Check (Page 140)

6

Fast Check (Page 143)

Number	Divisible by									
	2	3	4	5	6	7	8	9	10	11
128	√	×	√	×	×	×	√	×	×	×
6615	×	√	×	√	×	√	×	√	×	×
2856	√	√	√	×	√	√	√	×	×	×
37250	√	×	×	√	×	×	×	×	√	×
61908	√	√	√	×	√	√	×	×	×	√
83160	√	√	√	√	√	√	√	√	√	√

Fast Check (Page 147)



Practice Time 5C

1. (*a*) 4 (*b*) 5 (*c*) 6 (*d*) 4 (*e*) 2
(*f*) 7 (*g*) 8 (*h*) 3
2. (*a*) No, 3 (*b*) No, 3 (*c*) No, 6 (*d*) Yes (*e*) No, 8
(*f*) Yes (*g*) No, 3 (*h*) No, 2
3. (*a*) No (*b*) No (*c*) No (*d*) Yes (*e*) No
(*f*) No (*g*) No (*h*) No
4. (*a*) 2997 (*b*) 4599 (*c*) 5301 (*d*) 7002 (*e*) 9504
(*f*) 7299 **5.** 300
6. (*a*) 3 (*b*) 6 (*c*) 0 (*d*) 10 (*e*) 0
(*f*) 7 (*g*) 8 (*h*) 2
7. The digital roots of multiples of 11 follow a repeating sequence of 2, 4, 6, 8, 1, 3, 5, 7, 9
8. The digital roots follow a repeating cycle of 7, 4, 1.
9. 6
10. Adding 9 to any number never changes its digital root.
11. The sequence of roots will be: *r*, *r* + 2, *r* + 4, ... where *r* is digital roots of number.
12. 260 three-digit numbers divisible by 5 or 9.
13. (*a*) Always True (*b*) Always True (*c*) Always True (*d*) Never True
14. (*a*) A = 2, C = 1 or A = 7, C = 4 (*b*) A = 7, B = 5
(*c*) E = 3, F = 7, G = 1 (*d*) A = 1, B = 4 or A = 2, B = 8
(*e*) A = 1, B = 8 (*f*) A = 3, C = 7
(*g*) C = 1, A = 2, T = 3, R = 7, D = 8, O = 4, G = 6 (Answer may vary)
15. (*a*) (*ii*) (*b*) (*iii*)

Mental Maths (Page 149)

1. (*a*) **2.** (*b*) **3.** (*a*) **4.** (*d*)
5. (*a*)

Chapter Assessment

A. **1.** (*a*) **2.** (*d*) **3.** (*c*) **4.** (*a*)
5. (*c*) **6.** (*a*) **7.** (*d*)
B. **1.** (*d*) **2.** (*a*) **3.** (*a*)
C. **1.** Even **2.** 64 **3.** 0, 2 **4.** 3 **5.** odd
D. **1.** False **2.** True **3.** True **4.** True **5.** True
E. **1.** (*a*) Yes (*b*) Yes (*c*) No, 2 (*d*) Yes
(*e*) No, 2 (*f*) No, 10
2. (*a*) No (*b*) No (*c*) Yes (*d*) Yes
(*e*) Yes (*f*) No **3.** (*a*) 15 (*b*) 35
(*c*) 40 (*d*) 30 (Answer may vary)
4. 4 **5.** (*p*, *q*) : (7, 0), (5, 2), (3, 4), (1, 6)
6. (a, b): (1, 0), (8, 2), (6, 4), (4, 6), (2, 8)
7. 0 or 9 **8.** Yes, Yes
9. 45036, 45072, 45108, 45144, 45180 (Answer may vary)
10. (*a*) Q = 8, R = 5, P = 2 (*b*) A = 1, C = 2, D=4
(*c*) A = 1, P = 0 (*d*) A=2, B=6, C=7
(*e*) A = 6, C = 2, P = 5 (*f*) A =2, B=7, C=3, E=9
(*g*) A = 2, B = 5, C = 0
(*h*) A = 1, B = 0, C = 2, D=3, E=4, F=5, G=7, H=8 (Answer may vary)
11. (*b*)

Challenge Question (Page 153)

2. 3816547290

Chapter 6: We Distribute, Yet Things Multiply

Let's Recall

1. (*a*) 876 (*b*) 34 (*c*) 0
2. (*a*) 4,284 (*b*) 3,822 (*c*) 3,37,662
3. 1,296

Practice Time 6A

1. (*a*) 1,09,980 (*b*) 1,83,88,000 (*c*) 5,48,040 (*d*) 1,23,000
   (*e*) 26,72,000 (*f*) –1,120 (*g*) 0.6 (*h*) 13.816
2. (*a*) 11,232 (*b*) 10,605 (*c*) 10,914 (*d*) 10,918
3. 72

Fast Check (Page 158)

(11*x*, –24*x*, *x*); (11, –24, 1); (–24*y*, 11*y*, *y*)

Fast Check (Page 159)

Monomials: – 100, x^2y, 10*a*, $\frac{1}{2}t$

Binomials: –7*x* + 3, *x* + *y*

Trinomials: $\frac{p}{3} + 2q - r$, $3xy - 2yz$, $-\frac{1}{2}zx$, $3 - 7q + pr$, $a + b + c$

Think Tank (Page 160)

1. $6x^2 + 10x$ 2. $6ay + 9by - 3cy$ 3. $-2x - 10$
4. $x + 9$ 5. $-10x + 30$ 6. $84x - 27$

Fast Check (Page 161)

$a^3 - 3a^2b + 3ab - b^3$

Practice Time 6B

1. (*a*) Numerical Coefficient: $-\frac{4}{7}$, Variable: s^3
   (*b*) Numerical Coefficient: 5, Variable part: a^4
   (*c*) Numerical Coefficient: –8, Variable: q^4
   (*d*) Numerical Coefficient: $-\frac{4}{7}$, Variable: No variable

2. (*a*) 5*x*, –*x*, $\frac{5}{7}x$, *x*; –7*y*, $\frac{y}{2}$, *y* (*b*) 8*ax*, 5*xa*, $\frac{3}{5ax}$; –3by, $\frac{by}{10}$
   (*c*) $2m^2n^3$, $-3m^2n^3$, $7m^2n^3$ (*d*) $3x^2y^2z$, $-5x^2y^2z$, $7zx^2y^2$

3. (*a*) 4*pq* (*b*) $\frac{4}{9}p^4q^2$ (*c*) $-15y^3$ (*d*) $\frac{8}{5}n^{10}$
   (*e*) 84*pqr* (*f*) $\frac{3}{70}p^4q^4$

4. (*a*) $-12x^5$ (*b*) $6a^3b^4c^4$ (*c*) $-20a^4b$ (*d*) $6a^2$

5. (*a*) $10a^2$ (*b*) $12a^2b$ (*c*) *mn* (*d*) $\frac{2}{5}a^3b^2$

6. (*a*) $ax + ay + bx + by$ (*b*) $4y^2 - 10y - 6$
   (*c*) $-2x^2 + 2x + 12$ (*d*) $2x^2 + 5xy + 2y^2$
   (*e*) $2z^2 - 5pz - 3p^2$ (*f*) $4b^2 - a^2$

7. (*a*) –27 (*b*) 0 (*c*) $\frac{110}{27}$ (*d*) -40

8. (*a*) $2x^3 + 9x^2 + 19x + 15$ (*b*) $t^3 - 18t + 35$
   (*c*) $6x^4 + 10x^3 - 5x^2 - 15x - 6$ (*d*) $6x^3 - 19x^2 + 20x - 25$
   (*e*) $p^3 + r^3$ (*f*) $8c^4 - 28c^3 - 6c^2 + 25c - 14$

Fast Check (Page 165)

1. 10609 2. 9975

Practice Time 6C

1.

$(x-1)(y-1)$	$(x-1)y$	$(x-1)(y+1)$
$x(y-1)$	xy	$x(y+1)$
$(x+1)(y-1)$	$(x+1)y$	$(x+1)(y+1)$

2. (*a*) 11124 (*b*) 12544 (*c*) 9212 (*d*) 9996
   (*e*) 9711 (*f*) 9604
3. (*a*) $x^2 + 6x + 5$ (*b*) $y^2 + 5y + 6$
   (*c*) $4y^2 + 12yz + 9z^2$ (*d*) $a^2 - 25$
   (*e*) $m^2n^2 - 10mn + 25$ (*f*) $a^4 + a^2 - 12$
4. (*a*) $\frac{4}{9}m^2 - \frac{16}{49}n^2$ (*b*) 0.04
   (*c*) $\frac{16}{9}c^2 - \frac{1}{25}d^2$ (*d*) $\frac{x^2}{4} - \frac{xy}{3} + \frac{y^2}{9}$
   (*e*) $8z^2 + 18y^2$ (*f*) 8.81
5. (*a*) 27 (*b*) 727
6. (*a*) 8 (*b*) 3842

Think Tank (Page 170)

$a^2 + b^2 = (a - b)^2 + 2ab$

Think Tank (Page 171)

$k(k + 1) + k$ and $k(k + 2)$

Practice Time 6D

1. (*a*) 1078 (*b*) 3355 (*c*) 2824602 (*d*) 9393
   (*e*) 3838 (*f*) 95647 (*g*) 78078 (*h*) 4596592
   (*i*) 9900891 (*j*) 2277 (*k*) 66429 (*l*) 453618
   (*m*) 3398598 (*n*) 56774322 (*o*) 280891908
2. (*a*) (2*n* + 1), 21 (*b*) (4*n* + 1), 41 (*c*) 3*n*, 30 (*d*) $(n + 2)^2$, 144
3. The difference is always 1
4. $x^2 - xy$
5. $u^2 - uv$ (answer may vary), 108 sq unit
6. $55w^2 - 2g^2$

Challenge Question (Page 173)

1. (*i*) $a^2 - b^2$ (*ii*) $a^3 - b^3$ (*iii*) $a^4 - b^4$; $a^5 - b^5$
2. $26^2 - 24^2 = 100$

Maths Connect (Page 174)

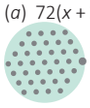
(*a*) $22x + 60y$
(*b*) $4x + 14y$

Chapter Assessment

A. 1. (*b*) 2. (*d*) 3. (*c*) 4. (*c*)
   5. (*b*) 6. (*c*)

B. 1. (*a*) 2. (*c*)

C. 1. $\frac{-1}{5}a^4b^4c^2$ 2. $1 - y^4$ 3. $-8xz$ 4. $24ab^2$
   5. 5

D. 1. (*a*) $9x^2 + 24xy + 16y^2$ (*b*) $36x^4 - 25y^4$
   (*c*) $\frac{x^2}{4} - \frac{xy}{3} + \frac{y^2}{9}$ (*d*) $x^2 - 2xy^2 + y^4$
   (*e*) $x^2 + 7x + 12$ (*f*) $x^2 + 2x - 15$
   (*g*) $p^4 - 3p^2 - 70$ (*h*) $0.04x^2 - 0.12xy + 0.09y^2$
2. (*a*) 21 (*b*) 25 (*c*) 17
3. 70
4. (*a*) $\frac{14}{15}x^3y + \frac{21}{25}x^4y^2$ (*b*) $15xy + 24y^2$
   (*c*) $3x^3y + 5x^2y^2 - 2x^4y$
5. (*a*) $-a^2 + 11a + 38$ (*b*) $-3x^2 - 4x + 33$
   (*c*) $a^2b + 12a^2b^2 + 3a^3b$ (*d*) $5a - 10b + 6c$
6. (*a*) 10404 (*b*) 9604 (*c*) 10920 (*d*) 9984
   (*e*) 9999.64 (*f*) 4200 (*g*) 5
7. (*a*) 14 (*b*) 194
8. (*a*) 49 (*b*) 1
9. (*a*) $x^4 - 81$ (*b*) $81x^4 - 16y^4$ (*c*) $x^8 - \frac{1}{x^8}$ (*d*) $256x^8 - 1$
10. (*a*) $72(x + 3)$ (*b*) Namita - ₹293.33, Kanchan - ₹146.67, Safalta-₹360
11.  271

Puzzle (Page 178)

$4 + 36x$	$4(1 + 9x)$
$8(-b - 4)$	$-8b - 32$
$-6x - 24$	$-6(x + 4)$
$18m + 20$	$(9m + 10) \times 2$
$6(-5n + 7)$	$-30n + 42$
$(-4 - 3n) \times -8$	$32 + 24n$
$5 - 35n$	$(1 - 7n)5$
$-6(a + 8)$	$-6a - 48$
$24p - 28$	$(-6p + 7)4$

Mental Maths

1. 2xy **2.** 0 **3.** $a^8 - b^8$ **4.** 14
5. 15 mn^2s **6.** 2

Chapter 7: Proportional Reasoning-1

Let's Recall

1. (*a*) $\frac{1}{3}$ (*b*) $\frac{2}{3}$ (*c*) $\frac{1}{4}$ (*d*) $\frac{3}{4}$
2. (*b*) $\frac{4}{3}$ (*c*) $\frac{7}{5}$ (*d*) 4
3. (*a*) 12 cm (*b*) $\frac{37}{40}$

Fast Check (Page 182)

83 : 90

Practice Time 7A

1. (*a*) 37 : 90 (*b*) 25 : 1 (*c*) 3 : 8 (*d*) 2 : 5
2. (*a*) 4 : 9 (*b*) 31 : 34 (*c*) 4 : 3
3. (*a*) 7 : 10 (*b*) 2.5 : 3 (*c*) 11 : 13
4. 7 : 15 **5.** 4 : 5 **6.** 3 : 4
7. $\frac{15}{18} = \frac{5}{6} = \frac{10}{12} = \frac{25}{30}$
8. (*a*) 3 : 1 (*b*) 16 : 15 (*c*) 5 : 12
9. ₹2100 **10.** 0.8 litre **11.** (*a*) 3 : 2 (*b*) 3 : 2

Fast Check (Page 189)

No

Practice Time 7B

1. True: (*a*), (*b*), (*e*), (*f*)
2. (*a*) 28 (*b*) 15 (*c*) 15 (*d*) 8
(*e*) 15 (*f*) 135
3. (*a*) – (*ii*) (*b*) – (*iii*) (*c*) – (*iv*) (*d*) – (*i*)
4. 4 **5.** 75 : 15 = 5 : 1 **6.** 80 **7.** 5
8. 6 **9.** 75

Fast Check (Page 196)

26400 yards

Practice Time 7C

1. 66 km **2.** ₹192 **3.** 5°C
4. 100 min (or 1 h 40 min) **5.** 63 m **6.** 60 L
7. 2 : 3 **8.** Mumbai
9. (*a*) 3 : 1 (*b*) 10 : 3 (*c*) 13 : 6 (*d*) 15 : 1
10. 13 : 12
11. 1.83 m

Chapter Assessment

A **1.** (*a*) **2.** (*b*) **3.** (*d*) **4.** (*b*) **5.** (*a*)
B. **1.** (*a*) **2.** (*d*)
C. **1.** division **2.** proportion **3.** 1 : 12
4. Same **5.** $\frac{1}{6}$
D. **1.** F **2.** F **3.** T **4.** F 5. F
E. **1.** (*a*) 18 : 25 (*b*) 27 : 38 (*c*) 3 : 25 (*d*) 120 : 1
(*e*) 11 : 100 (*f*) 3 : 25
2. (*a*) 15 : 14 (*b*) 14 : 11 (*c*) 3 : 8 **3.** 24, 40
4. 14 kg
5. (*a*) 18, 36, 20, 40 (*b*) $\frac{1}{8}, \frac{1}{4}, \frac{1}{3}, \frac{2}{3}$ (*c*) Not possible
6. 36 sq units
7. (*a*) 50 years, 70 years (*b*) 4 years
8. (*a*) 96,000 m² (*b*) ≈ 28.32 km (*c*) ≈ 20,234 m²
(*d*) 12,000 cc (*e*) 2.2 hectares
9. (*a*) Chocolate: 300 g, Nuts: 120 g (*b*) 5 : 1
10. (*a*) Cement: 3 buckets, Gravel: 12 buckets
(*b*) 6 : 12 = 1 : 2
11. (*a*) 1750 : 875 = 2 : 1 (*b*) No (*c*) Yes

Challenge Question (Page 201)

1. (*a*) 29 : 49 (*b*) 10 : 21
2. 120 h, 30 h

Mental Maths (Page 201)

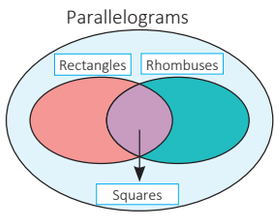
1. 12 cups **2.** 4 : 9 **3.** $(a + b)^3$ **4.** 243

Maths Connect (Page 201)

96 kg

Model Test Paper – 1

A. **1.** (*a*) **2.** (*b*) **3.** (*b*) **4.** (*c*) **5.** (*b*)
6. (*d*) **7.** (*c*) **8.** (*c*) **9.** (*a*) **10.** (*d*)
11. (*c*) **12.** (*c*)
B. **1.** –99 **2.** 60*xyz* **3.** 100 **4.** 17.5 cm and 10.5 cm
5. 20047
C. **1.** F **2.** T **3.** T **4.** T **5.** F
D. **1.** $a^2 + b^2 + ac - bc + a - b - c$ **2.** 98 **3.** 159975
4. $\left(\frac{4}{15}\right)^{-40}$ *or* $\left(\frac{15}{4}\right)^{40}$ **5.** $x = 3$
6. 63 m **7.** $\frac{15}{18} = \frac{\boxed{5}}{6} = \frac{10}{\boxed{12}} = \frac{\boxed{25}}{30}$
8.



Part-2

Chapter 1: Fractions in Disguise

Let's Recall

1. (*a*) colon (:) (*b*) 100 : 1 (*c*) consequent (*d*) equal
(*e*) 25
2. (*a*) 3 : 50 (*b*) 3 : 50 (*c*) 3 : 10 (*d*) 1 : 12
3. Income = ₹19,200, Expenditure = ₹7200
4. (*a*) $\frac{1}{2} = \frac{50}{100}$ (*b*) $\frac{1}{4} = \frac{25}{100}$ (*c*) $\frac{3}{10} = \frac{30}{100}$

Fast Check (Page 209)

1. 20%, 40%, 60%, 80%
2. Red beads- 40% and Green beads- 60%

Think Tank (Page 209)

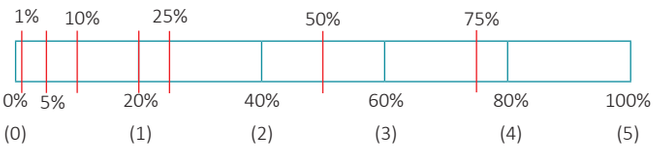
44%

Think Tank (Page 210)

1. = **2.** > **3.** < **4.** =

Fast Check (Page 211)

Per cent	25%	50%	75%	80%	20%	10%	5%	1%
Fraction	$\frac{25}{100}$	$\frac{50}{100}$	$\frac{75}{100}$	$\frac{80}{100}$	$\frac{20}{100}$	$\frac{10}{100}$	$\frac{5}{100}$	$\frac{1}{100}$
Decimal	0.25	0.5	0.75	0.8	0.2	0.1	0.05	0.01
Ratio	1 : 4	1 : 2	3 : 4	4 : 5	1 : 5	1 : 10	1 : 20	1 : 100



Think Tank (Page 212)

1. (*a*) 65% (*b*) 16% (*c*) 55% (*d*) 100%
2. 30%

Practice Time 1A

1. (*a*) 33% (*b*) 37.5% (*c*) 25% (*d*) 16.67%
(*e*) 70% (*f*) 15%
2. (*a*) 45% (*b*) 53.33% (*c*) 62.5% (*d*) 13%
(*e*) 48% (*f*) 90%
3. (*a*) $\frac{21}{25}$ (*b*) $\frac{2}{5}$ (*c*) $\frac{17}{100}$ (*d*) $\frac{13}{20}$
(*e*) $\frac{6}{25}$ (*f*) $\frac{18}{25}$
4. (*a*) 98% (*b*) 42% (*c*) 67% (*d*) 3%
(*e*) 4.2 % (*f*) 98%
5. (*a*) 0.27 (*b*) 0.48 (*c*) 0.54 (*d*) 0.72
(*e*) 0.84 (*f*) 0.96
6. (*a*) 34.29% (*b*) 77% (*c*) 74.36% (*d*) 44.44%
(*e*) 53.57% (*f*) 32%
7. (*a*) 57 : 100 (*b*) 3 : 25 (*c*) 3 : 625 (*d*) 19 : 100
(*e*) 2 : 25 (*f*) 19 : 20
8. 75% **9.** 31.25% **10.** 55% **11.** 35%
12. 40%

Think Tank (Page 215)

6

Fast Check (Page 215)

1. 70 **2.** 500 kg **3.** 280 litres

Think Tank (Page 220)

$11\frac{1}{9}\%$

Practice Time 1B

1. (*a*) 94.5 (*b*) 4.75 L (*c*) 52.9 m (*d*) 12 kg
2. (*a*) ₹340 (*b*) 800 kg (*c*) 5000 km (*d*) 1818.18 L
(*e*) 125 hr
3. (*a*) 22.5% (*b*) 4% (*c*) 0.86% (*d*) 75%
(*e*) 90%
4. (*a*) 16.67 (*b*) 145.92 (*c*) 5000 (*d*) 73.12
(*e*) 750
5. (*a*) 140, 210, 280 (*b*) 21.5, 2.15, 12.9
(*c*) 27, 54, 300
6. 0.139% **7.** 500 **8.** 184.21 **9.** 225
10. A's share = 46.67% and B's share = 53.33%
11. (*a*) 93.6 (*b*) 132 **12.** 1.14
13. 506 oranges **14.** 50 students **15.** 6.67%

Fast Check (Page 223)

₹5,20,000

Fast Check (Page 225)

1.	Profit:₹45	23.68% profit
2.	Loss:₹20	16.67% loss
3.	Loss:₹160	8.89% loss
4.	Loss:₹400	10% loss

Think Tank (Page 226)

₹580

Practice Time 1C

1. (*a*) ₹3750 (*b*) ₹21,250 **2.** ₹1350 **3.** Yes
4. ₹22,500 **5.** ₹11,475 **6.** 25%
7. Profit %, = 6.67% **8.** Profit = ₹352, Profit % = 20.77%
9. 3.23% **10.** ₹100 **11.** ₹3120
12. Loss = ₹15 and Loss % =12% **13.** 15% gain
14. 33.33% profit **15.** No profit no loss
16. Gain of 7.14%
17. ₹900 **18.** ₹2000
19. Set of mechanix is less expensive at store A **20.** ₹1662.50

Think Tank (Page 230)

25%

Think Tank (Page 230)

50

Practice Time 1D

1. 350 **2.** 375
3. (*a*) ₹9 (*b*) ₹59
4. (*a*) ₹162 (*b*) ₹1062 **5.** ₹360 and ₹2360
6. ₹80 and ₹1680
7. ₹17,700 **8.** ₹1000 **9.** ₹2000
10. (*a*) ₹1440 (*b*) CGST = ₹720 and SGST = ₹720
(*c*) ₹9440
11. (*a*) ₹1800 (*b*) ₹1800 (*c*) ₹23,600
12. Yes, the shopkeeper is correct. **13.** 5% **14.** 12.5%

Fast Check (Page 231)

₹6600

Think tank (Page 232)

8 years

Think Tank (Page 234)

₹10,500 and ₹752.15

Think Tank (Page 236)

₹637.50

Think Tank (Page 237)

₹1000

Practice time 1E

1.

Sr. No.	Principal (₹)	Time	Rate of Interest (%)	Simple Interest (₹)	Amount(₹)
1	4800	2 years	15	1440	6240
2	12,500	4 months	6	250	12,750
3	7550	3 years	8	1812	9362
4	4800	73 days	15	144	4944

2. ₹2700 **3.** 1 year 4 month
4. ₹750 and 10% **5.** ₹27,783 and ₹3,783 **6.** ₹29,000
7. ₹79,507 **8.** ₹3152.50 **9.** ₹13,771.80
10. ₹482.40 **11.** ₹2500 **12.** 2 years **13.** 10%
14. ₹2,85,077 **15.** 1,25,280 **16.** 2,66,200 **17.** 56,784
18. ₹58,401.60 **19.** 46,305 **20.** ₹25,625
21. Amount = ₹19,423.80 and CI = ₹4423.80

Challenge Question (Page 240)

₹1908

Chapter Assessment

A. 1. (*d*) **2.** (*b*) **3.** (*c*) **4.** (*c*)
5. (c) **6.** (b)
B. 1. (*a*) **2.** (*a*) **3.** (*a*) **4.** (*d*) **5.** (a)
C. 1. (*c*) **2.** (*a*) **3.** (*e*) **4.** (*f*) **5.** (*d*) **6.** (*b*)
D. 1. 8 **2.** 21 **3.** 101.25 **4.** Principal
5. Cost price (CP)
E. 1. 220 plants **2.** 83% **3.** 20% **4.** 16.67%
5. Gain % = 10% **6.** ₹1294.96 **7.** ₹16,000
8. ₹2,04,073.34 **9.** 2 years
10. 25,850 **11.** 200 seats **12.** 25% gain
13. Raman, ₹960
14. ₹5250 **15.** ₹75,000 **16.** ₹21,535
17. (*a*) Store P - ₹40.00, store Q - ₹60.00, store R - ₹53.33, store S - ₹53.33
Store P < Store R = Store S < Store Q
(*b*) Store P - 50%, Store Q – 25%, Store R- 33.33%, Store S- 33.33%
(*c*) Store P
18. (*a*) 0.54% (*b*) 34.19% (*c*) 65.71%

Mental Maths (Page 245)

1. ₹7200 **2.** ₹960 **3.** ₹187 **4.** ₹79
5. ₹1260 **6.** ₹800 **7.** 70%

Chapter 2: The Baudhãyana-Pythagoras Theorem

Let's Recall

1. (*a*) 10 (*b*) 5 (*c*) 9 2. No
3. Right Triangle

Fast Check (Page 250)

(*a*) 4.24 (*b*) 5.66 (*c*) 7.07 (*d*) 8.49

Fast Check (Page 255)

(*a*)

Practice Time 2A

2. (*a*) $x = 25$ (*b*) $x = 5, y = 13$ (*c*) $p = 15, q = 25$
3. 9 cm **4.** 37 cm **5.** 26 km
6. 16 cm, 12 cm **7.** 20 m
8. (*a*) $18\sqrt{2}$ cm, $18\sqrt{2}$ cm (*b*) $25\sqrt{2}$ cm, $25\sqrt{2}$ cm
9. (*b*) $2\sqrt{34}$ cm **10.** 12 cm
11. $\sqrt{2}$ × sidelength **12.** 15 cm **13.** 128 cm^2

Fast Check (Page 257)

(5, 12, 13), (7, 24, 25), (8, 15, 17) (Answer may vary)

Practice Time 2B

1. (*a*) 5 (*b*) 12 (*c*) 10
2. (*a*) 53 (*b*) 37 (*c*) 97 (*d*) 89 (e) 39
3. $20\sqrt{2}$ cubits **4.** 25 cubits **5.** 26 cubits
6. 15 cubits **7.** 17 cubits
8. 15 cubits **9.** 29 cubits **10.** 12 cubits **11.** 50 cubits

Challenge Question (Page 260)

2. $5\sqrt{3}$ cm **3.** 42 cm

Puzzle (Page 260)

1. Baudhāyana Theorem **2.** 25 units **3.** 17 units
4. $7\sqrt{2}$ units

Mental Maths (Page 261)

1. 15 cm **2.** 20 cm **3.** 60 feet **4.** (7, 24, 25)
5. 8 cm

Chapter Assessment

A. 1. (*c*) **2.** (*b*) **3.** (*a*) **4.** (*b*)
B. 1. (*c*) **2.** (*a*)
C. 1. $6\sqrt{2}$ cm **2.** 75 cm **3.** 300% **4.** one-fourth
D. 1. T **2.** F **3.** T **4.** T
E. 1. 17 m **2.** 30 cm **3.** 13 m **4.** 5, 5
5. 15 cm **6.** 20 cm
7. 500 m **8.** 23.81 m **9.** 85 units
10. (*a*) 10 ft.
(*b*) The beam will no longer reach the designated connection point at the end of the 8 ft horizontal pole. To make a shorter beam fit, the farmer would have to pull the vertical pole inward or the horizontal pole upward. Thus, the structure will lose its load-bearing efficiency, leading to potential collapse.

Chapter 3: Proportional Reasoning – 2

Let's Recall

1. Printing of 20 stamp size photos require less area than 8 passport size photos, so the cost of photographs is less for 20 stamp size photos.
2. 10 : 1
3. 30 times
4.

Photos	Passport	Postcard	Stamp
Size (in sq. cm)	15.75	150	5
Rate per copy (in ₹)	7.5	75	3

Think Tank (Page 267)

15:56

Think Tank (Page 269)

1. (*i*) Distance travelled and time, when speed is constant.
(*ii*) Cost of items and number of items purchased, when the price per item is fixed.
(*iii*) Wages earned and number of hours worked, when the rate of wages per hour is constant.
2. 9.8

Fast Check (Page 272)

22 bags

Think Tank (Page 274)

1. No, because the triangle inequality is not satisfied.
2. No, as their sizes may differ.

Practice Time 3A

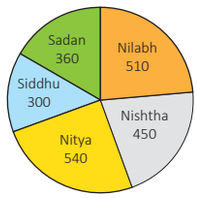
1. (*a*) T (*b*) F (*c*) F (*d*) T (*e*) T
2. yes
3. $a = 21, b = 48, c = 63, d = 68$ **4.** 30 : 40 : 56 : 63
5. 3 : 12 : 16 **6.** 2 : 15 **7.** 155 km **8.** 1250 km
9. 1680 km
10. Warm-up = 30 min, Passing = 1 hour, Shooting = 45 min, Tactics = 45 min
11. 18 litres, 33 litres
12. ₹20 = 6, ₹10 = 12, ₹5 = 18, ₹2 = 24; ₹378
13. Yes, 96°, 72°, 72°, 120°
14. Cement = 40 units, Sand = 60 units, Gravel = 120 units
15. (*a*) 9 cm (*b*) 294 g
16. Gold = 54 g, Silver = 3 g, Total alloy = 72 g
17. Study = 3 hours, Play = 2 hours **18.** ₹3240, ₹2160, ₹1800
19. 90 kg **20.** ₹10,000

Practice Time 3B

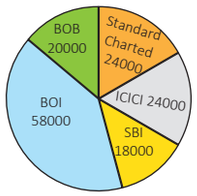
1.

2.

Name	Nilabh	Nishtha	Nitya	Siddhu	Sadan	Total
Expenditure (In ₹)	510	450	540	300	360	2160
Central angle	85°	75°	90°	50°	60°	360°



3.



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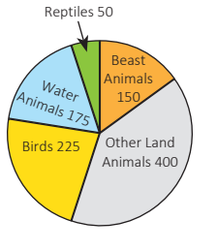
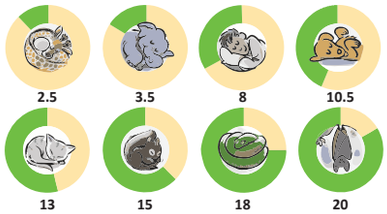


5. (*a*) Favourite activities of 500 students.
(*b*) Spending time with Smartphone
(*c*) 50 (*d*) 20% (*e*) 14% (*f*) 26%
6. (*a*) 329 children (*b*) 168 children (*c*) 309.6°
(*d*) 2 hours or more per day
7.



Practice Time 3C

1. (*a*) Inversely (*b*) Directly (*c*) Inversely
(*d*) Neither of two (*e*) Inversely (*f*) Directly
(*g*) Neither of the two (*h*) Directly

2. (*a*) Yes (*b*) No (*c*) Yes
3. $a = 40, b = 30, c = 20, d = 60$ **4.** 200 **5.** 36 days
6. (*a*) 16 hours (*b*) 60 km/h **7.** 448 extra workers
8. 9 kg **9.** 1 hour 24 minutes **10.** 15
11. 36 **12.** 48 machines **13.** 27 less horses
14. 1 extra sweet

Fast Check (Page 285)

1. $3\frac{3}{7}$ hours **2.** (*a*) 20 days (*b*) 5 days

Think Tank (Page 286)

40 hours

Practice Time 3D

1. 4 days **2.** $\frac{3}{8}$ of work **3.** $37\frac{1}{2}$ days **4.** $7\frac{2}{3}$ days
5. $25\frac{5}{7}$ hours **6.** 17.5 m/s **7.** $12\frac{1}{2}$ hours **8.** 15 hours
9. 15 rows

Mental Maths (Page 287)

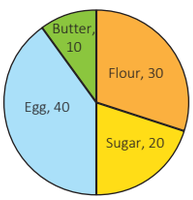
1. (*a*) Directly (*b*) Neither of the two
(*c*) Neither of the two (*d*) Inversely
2. $x = 15, 20, 25$; $y = 21, 28, 35$ (Answer may vary)
3. $m = 10, 4, 5$; $n = 12, 30, 24$ (Answer may vary)
4. 9.6 km **5.** 2 hours 15 minutes **6.** 480 cm^2

Challenge Question (Page 288)

1. ₹9000
2. (*a*) $8\frac{1}{3}\%$ (*b*) Games (*c*) 3 hours (*d*) 900 visitors
(*e*) 3 : 4 (*f*) 8 hours
3. ₹400 **4.** A = ₹60, B = ₹90, C = ₹360

Chapter Assessment

A. **1.** (*d*) **2.** (*d*) **3.** (*a*) **4.** (*a*)
5. (*a*) **6.** (*c*) **7.** (*a*) **8.** (*b*)
B. **1.** (*d*) **2.** (*d*) **3.** (*c*)
C. **1.** 288 days **2.** 8 **3.** Pie charts **4.** 100°
5. 0.35
D. **1.** F **2.** F **3.** F **4.** T **5.** T
E. **1.** 240 boxes **2.** 8×10^7 kg **3.** Orange = 192 L, Grape = 96 L
4. 12 days **5.** 0.6s **6.** Red = 4 L, Blue = 6 L
7.



Chapter 4: Exploring Some Geometric Themes

Let's Recall

1. (*a*) HE (*b*) AEFB and HEFG (*c*) ABCD, ABFE, ADHE

Think Tank (Page 295)

$\frac{8}{9}$ square units

Fast Check (Page 297)

1. Starting with an equilateral triangle **2.** 729

Practice Time 4A

1. 9 **2.** 8 remains and 1 removed
3. 64 **4.** 8^n **5.** $\left(\frac{8}{9}\right)^n$
6. It tends to zero but never becomes zero.
7. 73 **8.** $\frac{64}{81}$ **9.** $H_{n+1} = H_n + R_n$
11. $\frac{64}{81}$ **12.** $\left(\frac{8}{9}\right)^{10}$
13. (*a*) T (*b*) F (*c*) T (*d*) F
14. $\left(\frac{3}{4}\right)^n$ **15.** $\frac{9}{2}$ units **16.** The perimeter grows
17. (*a*) 48 cm^2 (*b*) 36 cm^2 (*c*) 27 cm^2
(*d*) $A_n = 64 \times \left(\frac{3}{4}\right)^n$

Fast Check (Page 298)

equilateral

Think Tank (Page 298)

$\frac{4}{3}$

Practice Time 4B

1. (*a*) (*ii*) (*b*) (*ii*) (*c*) (*ii*)
2. (*a*) 36cm (*b*) 48 cm (*c*) $\left(\frac{4}{3}\right)^n \times 27$ cm
3. (*a*) 36cm (*b*) 48 cm (*c*) $48 \times \frac{4}{3}$ 64 cm
(*d*) $36 \times \left(\frac{4}{3}\right)^n$

Fast Check (Page 301)

1. 6 faces, 8 vertices, cube 12 edges
2. 4 faces, 4 vertices, 6 edges, Tetrahedron
3. 5 faces, 6 vertices, 9 edges

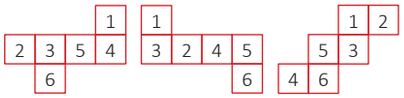
Think Tank (Page 302)

1. Tetrahedron **2.** 6 **3.** Square pyramid
4. 3 **5.** No

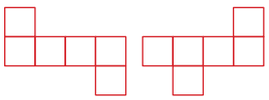
Fast Check (Page 304)

Practice Time 4C

1. (*a*) (*ii*), (*b*) (*vi*) (*c*) (*iv*) (*d*) (*i*)
(*e*) (*v*) (*f*) (*iii*)
2. (*a*) EF (*b*) EFBA, FGCB (*c*) AEHD, AEFB, ADCB
(*d*) Vertex D (*e*) CD, EF (*f*) AE, AD, BF, BC
3.



4. (Answer may vary)



6.

	Solids	Vertices (V)	Faces (F)	Edges (E)	Is F + V – E = 2?
(*a*)	Triangular prism	6	5	9	Yes
(*b*)	Square pyramid	5	5	8	Yes
(*c*)	Rectangular prism	8	6	12	Yes
(*d*)	Pentagonal pyramid	6	6	10	Yes
(*e*)	Pentagonal prism	10	7	15	Yes

7.

	(*a*)	(*b*)	(*c*)	(*d*)
Faces	4	6	20	8
Vertices	6	8	12	6
Edges	8	12	30	12

8. No.
9. Faces = 12, Edges =30, Vertices =20
General case (*n*-sided prism): Faces = $n + 2$, Edges = $3n$, Vertices = $2n$
10. Faces =11, Edges = 20, Vertices =11
General case (*n*-sided pyramid): Faces = $n + 1$, Edges = $2n$, Vertices = $n + 1$

Fast Check (Page 310)

(*i*) Top view (*ii*) Front view (*iii*) Side view

Practice Time 4D

1. (*b*) (*i*) Front view (*ii*) Top view (*iii*) Side view
(*c*) (*i*) Front view (*ii*) Top view (*iii*) Side view
2. (*a*) (*i*) Front view (*ii*) Side view (*iii*) Top view
(*b*) (*i*) Front view (*ii*) Top view (*iii*) Side view
(*c*) (*i*) Top view (*ii*) Front view (*iii*) Side view
4. (*a*) Top - Triangle, Side - Rectangle, Front - Rectangle
(*b*) Top - Triangle, Side - Triangle, Front - Triangle
(*c*) Top - Circle, Side - Rectangle, Front - Rectangle
(*d*) Top - Circle, Side - Triangle, Front - Triangle
5. (*a*) 6 (*b*) 8 (*c*) 23

Practice Time 4E

6.

Shadow diagram	Name of 2-D shapes formed in shadow
	Square
	Parallelogram
	Circle
	Rectangle
	Triangle

7. (*a*) Cone, Triangular pyramid, Birthday cap, Ice cream cone.
(*b*) Rectangular Prism, Brick, Wooden box, Cylinder from the side
(*c*) Cylinder from top, Cone from base, Sphere, ball.
(*d*) Cube, Dice, Square prism.
(Answer may vary)

Challenge Question (Page 319)

1. (*i*) GH (*ii*) DC
2. (*i*) 2 + 1 (*ii*) 3 + 4

Chapter Assessment

A. **1.** (*b*) **2.** (*b*) **3.** (*a*) **4.** (*c*)
5. (*a*) **6.** (*b*) **7.** (*a*)
B. **1.** (*a*) **2.** (*b*) **3.** (*b*)
C. **1.** cone **2.** congruent **3.** cube **4.** 5
5. cone **6.** triangular prism **7.** 10, 15, 7
D. **1.** F **2.** F **3.** T
E. **1.** 8 cm × 2 cm × cm
3. 
4. (*a*) Rectangle (*b*) Rectangle (*c*) Circle (*d*) Triangle
5. X = 15, Y = 8, Z = 9, P = 8, Q = 6
7. (*a*) 6 (*b*) 7 (*c*) Cube or cuboid
(*d*) 12

Mental Maths (Page 324)

1. Triangular pyramid **3.** Cone, cylinder, sphere
4. Square/rectangular pyramid
5. Triangular prism, cone, square pyramid

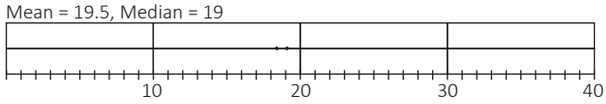
Unit Test – 2

A. **1.** (*c*) **2.** (*b*) **3.** (*b*) **4.** (*a*)
5. (*a*) **6.** (*b*) **7.** (*a*)
8. (*a*) 12 km/h
9. (*d*) **10.** (*a*)

B. **1.** 90 **2.** 288 days **3.** cube **4.** 6 faces
5. $18\sqrt{2}$ units, $18\sqrt{2}$ units
C. **1.** F **2.** F **3.** T **4.** T
5. F
D. **1.** Amount = ₹48,620.25, Compound Interest = ₹8,620.25
2. Single discount = 34%
3. Value of car after 2 years = ₹1,98,000
4. (*a*) Hexagonal prism (*b*) Tetrahedron
(*c*) Square pyramid
5. Time = 60 hours
7. Diagonal distance = 15 cubits
8. With compounding: ₹24,310.13; Without compounding: ₹24,000;
Difference = ₹310.13

Chapter 5: Tales by Dots and Lines

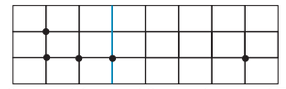
Let's Recall

1. Mean = 19.5, Median = 19


2. Mean = 7.67 **3.** Median = 7
4. (*a*) Badminton (*b*) 10 students (*c*) Athletics (*d*) 10 students

Fast Check (Page 330)

1.


Mean = 10
2.


Mean = 12

Fast Check (Page 333)

New mean = 10 × (original mean)

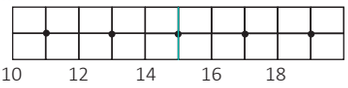
Think Tank (Page 334)

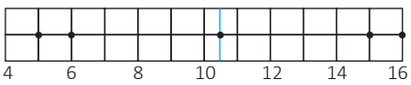
32.1 mangoes

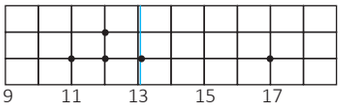
Think Tank (Page 337)

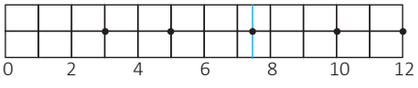
1. Microsoft Excel (Answer may vary) **2.** = AVERAGE (C1 : C5)

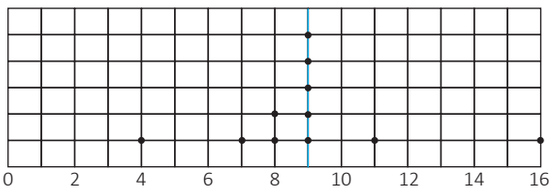
Practice Time 5A

1. (*a*)


(*b*)


(*c*)


(*d*)


2.


3. (*a*) 10 (*b*) 19 (*c*) 7.4 **4.** 5
5. 12.9 **6.** 4.5 **7.** 75
8. $x = 5$ **9.** Correct mean = 49.67

10. 100.125 **11.** 85 **12.** 18
13. Mean = 7.71 **14.** ₹425.06 **15.** ₹1439.67

Think Tank (Page 339)

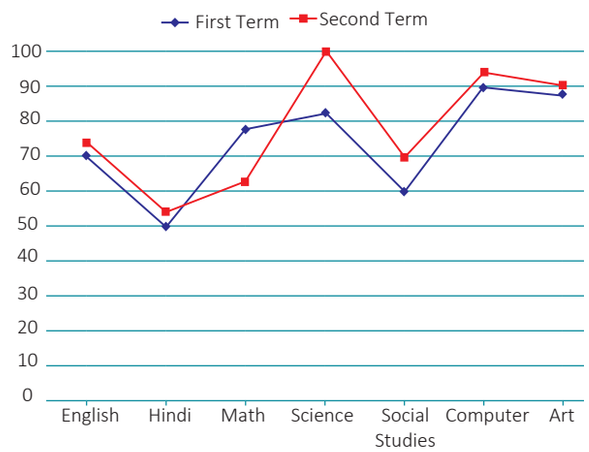
$a = 19$

Practice Time 5B

1. (*a*) 4 (*b*) 3 (*c*) 10 (*d*) 2.5 (*e*) 4
2. 41 kg **3.** 31.5 **4.** $p = 29$ or greater
5. $x = 18$ **6.** 141 cm **7.** 24.5 marks

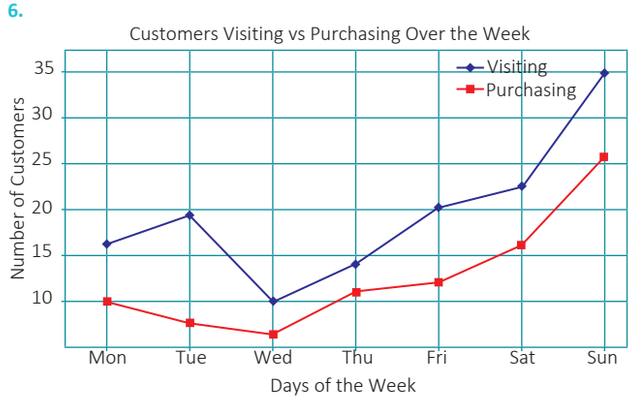
Practice Time 5C

1. (*a*) 10 thousand (*b*) 6 : 7
(*c*) February, April, May and June
(*d*) March and June
2. (*a*) Daily Steps walked by Kabir's Father
(*b*) Wednesday, Thursday and Saturday
(*c*) Monday, Tuesday, Friday and Sunday
(*d*) Sunday
3. (*a*) 1.75 million (approx.) (*b*) From April 2022 to Mar 2025
(*c*) January 2023: 1.7 million (approx.);
January 2024: 1.75 million (approx.);
January 2025: 1.75 million (approx.)
(*d*) 1.4 million and 1.9 million
4. (*a*) 2024 (*b*) August
(*c*) The rainfall in August increased from 2023 to 2025 consistently.
(*d*) 2025
5.



(*a*) Science (*b*) Maths (*c*) Art

6.



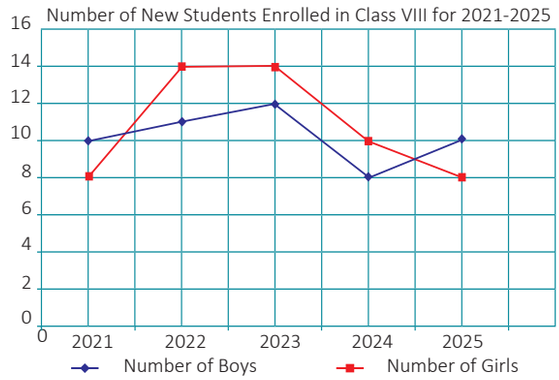
7. (*a*) Tea (*b*) Namakkal, –98
(*c*) Kanyakumari (+98), Thoothukkudi (+95)
(*d*) less preference
(*e*) The northern regions of Tamil Nadu tend to prefer Coffee, while the southern regions show a stronger inclination towards Tea.

Challenge Question (Page 349)

55.71 ≈ 56 minutes

Chapter Assessment

A. **1.** (*c*) **2.** (*c*) **3.** (*c*) **4.** (*b*)
5. (*c*) **6.** (*b*) **7.** (*b*) **8.** (*c*)
B. **1.** (*a*) **2.** (*a*)
C. **1.** average **2.** middle **3.** decreases **4.** equal
5. frequency
D. **1.** F **2.** T **3.** F **4.** T **5.** T
E. **1.** $x = 3$ **2.** 12 **3.** 25 **4.** 184 **5.** 81
6. Mean = ₹419.33; Median = ₹410
7.



8. (*a*) Sikkim, Mizoram, Andaman and Nicobar Islands
(*b*) Ladakh (white shade)
(*c*) Chhattisgarh (44) > Assam (35.28)
(*d*) Forests are green so the states covering more area with forests are shaded dark green.

Chapter 6: Algebra Play

Let's Recall

1.

Lap	Starting Coins	Doubled Amount	After Paying 8 Coins
1st	x	$2x$	$2x - 8$
2nd	$2x - 8$	$4x - 16$	$4x - 24$
3rd	$4x - 24$	$8x - 48 = 8$	0

$x = 7$ coins
2. (3,7), (13,17), (2,3), (2,13), (3,17) (Answer may vary)
3. (*a*) F (*b*) F (*c*) F (*d*) T
4. (*a*) 6 (*b*) 0 (*c*) 1 (*d*) 0

Fast Check (Page 356)

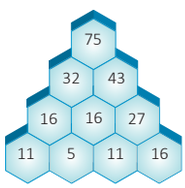
Yes

Think Tank (Page 358)

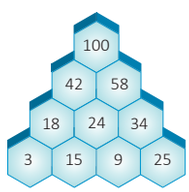
Yes

Practice Time 6A

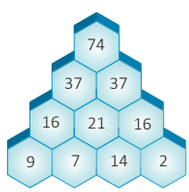
1. 99 (a – c); because the result is of the form 99 × (digit), the sum of the hundreds and units digits is always 9.
2. Yes
3. (*a*)



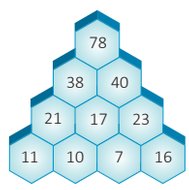
(*b*)



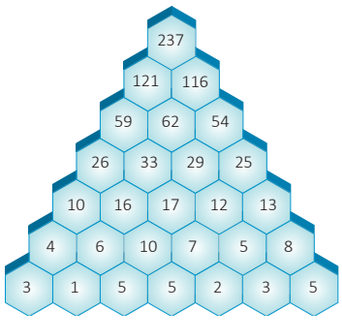
(*c*)



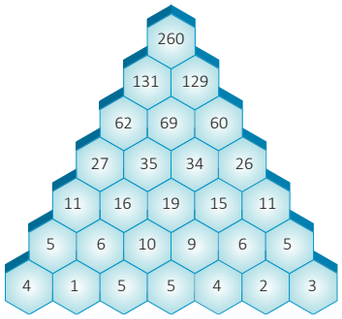
(*d*)



(*e*)

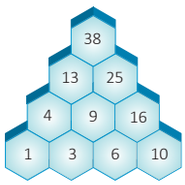


(*f*)



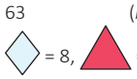
4. Yes

5. (*a*) 56 (*b*) 63 **6.**



Practice Time 6B

1. (*a*) 63 (*b*) 207

2. (*a*)  = 8, =10,  =7 ; 327

(*b*)  = 2,  = 10,  = 6 ; 124

(*c*)  = 10,  =4,  = 7; 167

(*d*)  = 10,  =6,  = −20; −2400

(*e*)  = 12,  =.8,  = 4; 1536

(*f*)  = 12,  =5,  =1; 240

Fast Check (Page 365)

1. 31 × 7 **2.** 53 × 9 **3.** Yes, 47 × 3 = 141

Practice Time 6C

1. 75 × 8 **2.** sum = 2664; Yes, divisible by 74, and 12

3. 48 **4.** 52 **5.** 14

Practice Time 6D

1. 72 **2.** 7 and 70 **3.** 54 and 62

4. 4 and 11 **5.** −1 and 3 **6.** 60°, 60°, 60°

7. Robert's age is 10 years, Father's age is 40 years

8. First Prize: ₹600, Second Prize: ₹500, Third Prize: ₹400

Chapter Assessment

A. 1. (*c*) **2.** (*b*) **3.** (*c*) **4.** (*a*)

B. 1. (*c*) **2.** (*d*)

C. 1. $100a + 10b + c$ **2.** 9 **3.** 24 **4.** largest digit

D. 1. F **2.** T **3.** T **4.** F

E. 2. 45 and 65

3. (*a*)  = 11,  = 5 ; 21 (*b*)  = 4,  = 7; 15

4. 20

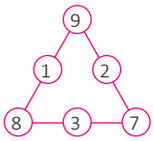
5. Yanshu's age is 12 years, Mother's age is 48 years **6.** 18

7. (*a*) 22km/h (*b*) 20km/h (*c*) 4 hours

Mental Maths (Page 372)

1. 2 **2.** 0 **3.** 8

4.



Challenge Question (Page 372)

1. All the numbers in the pyramid are Virahanka-Fibonacci numbers. The number at the top is $(2n - 1)7n$ Virahanka-Fibonacci number.

2. 16 cm, 16 cm, 12 cm

Chapter 7: Area

Lets Recall

1. (*a*) 6 m 8 cm

(*b*) Section A = 3 sq ft, Section B = 4 sq ft, Section C = 5.25 sq ft

2. Yes; Four congruent triangles (Answer may vary)

Fast Check (Page 375)

1. 144 in² **2.** 10,00,000 m²

Fast Check (Page 376)

Breadth = 45 m

Think Tank (Page 378)

No

Think Tank (Page 379)

4 cm², 4 cm², 12 cm², 12 cm², 3 cm²

Practice Time 7A

1. Width = 20 cm; Perimeter = 90 cm

2. Breadth = 20 m; Perimeter = 84 m

3. Breadth = 15 cm; Area = 525 cm²

4. Breadth = 8 cm; Square encloses more area by 4 cm²

5. Length = 64 cm; Perimeter = 178 cm

6. The square plot of land has a greater area than the rectangular plot of land by 36 m².

7. Cost of white washing the wall ₹280.

8. Area of two paths = 136 m².

9. Area of the path = 3584 m²; Cost of cementing = ₹62,720.

10. Area of the path = 1176 m².

Fast Check (Page 381)

30 cm²

Think Tank (Page 384)

$\frac{1}{4}$

Practice Time 7B

1. (*a*) 20 cm² (*b*) 12 cm² (*c*) 20.25 cm² (*d*) 16 cm²

2. (*a*) x = 4.8 cm (*b*) a = 50 cm, b = 24 cm (*c*) z = 18 cm

3. Area of each triangle = 48 cm²

4. Area of each triangle = 12.5 cm²

5. 37.5 cm²

6. 330 cm²; 165 cm²; 165 cm²

7. Area of shaded part = 10 cm²

Fast Check (Page 389)

(*a*) 33 cm² (*b*) 70 cm² (*c*) 12 cm²

Practice Time 7C

1. (*a*) Area of parallelogram = 48 cm².

(*b*) Height of parallelogram = 3 cm.

(*c*) Base of parallelogram = 6.4 cm.

(*d*) Height of parallelogram = 2.1 m.

2. (*a*) 28 cm² (*b*) 15 cm² (*c*) 8.75 cm² (*d*) 24 cm²
3. The rectangle has the greater area.
4. Base of parallelogram = 1.3 mm.
5. Base = 8 cm, Height = 40 cm.
6. 11 cm **7.** Base = 19.2 m, Height = 16 m
8. Area = 330 cm², length of side SR = 27.5 cm, perimeter = 85 cm
9. Cost of fencing = ₹13,800 **10.** 45000 tiles

Fast Check (Page 391)

1. 205 cm² 2. 24 cm²

Think Tank (Page 392)

No

Fast Check (Page 394)

Area of rhombus = 24 cm²; Other diagonal length = 6 cm

Practice Time 7D

1. (*a*) 32 cm² (*b*) 170 cm² (*c*) 270 cm²
2. (*a*) 104.5 cm² (*b*) 24 cm² (*c*) 6 cm²
3. 3900 cm² **4.** 0.88 m² **5.** 170 cm²
6. I = III = 96 cm²; II = IV = 80 cm²
7. 24 cm **8.** 27 cm, 33 cm **9.** 292 m
10. 24 cm 11. ₹3750 **12.** 384 cm², 20 cm

Practice Time 7E

1. 82 cm² **2.** (*a*) 750 cm² (*b*) 51 cm² **3.** 337.5 m²

Challenge Question (Page 398)

1. Septagon **2.** 260 m²

Chapter Assessment

A. 1. (*a*) **2.** (*b*) **3.** (*b*) **4.** (*b*)
B. 1. (*a*) **2.** (*a*) **3.** (*d*)
C. 1. 5 **2.** remains unchanged **3.** 12 cm
4. 72 cm² **5.** 96 cm²
D. 1. T **2.** F **3.** T **4.** F
E. 1. 75% **2.** 17 m
3. (*a*) 352.8 m², 468.3 m² (*b*) 106.3 m², 102.8 m²
(*c*) 13.4 m², 235.6 m²
4. (*a*) 33 cm² (*b*) 1000 cm²
5. Base = 18 m and height = 24 m
6. Altitude = 1.4 m
7. (*a*) MQ = 19.5 cm (*b*) SR = 18 cm
8. ₹12,150
9. ₹4,10,400
10. (*a*) 256 cm² (*b*) 64 cm (*c*) 54.63 cm

Mental Maths (Page 402)

1. 64.52 cm² **2.** 150 cm² **3.** Square **4.** $\frac{1}{2}$
5. 9.47 cm **6.** 3 : 1 : 2

Model Test Paper – 2

A. 1. (*b*) **2.** (*a*) **3.** (*c*)
4. (*b*) **5.** (*c*) **6.** (*b*)
7. (*b*) **8.** (*d*) **9.** (*b*)
10. (*a*) **12.** (*b*)
B. 1. 100 **2.** $7\sqrt{2}$ cm **3.** 90° **4.** 288 days
5. $\frac{1}{2} \times (a+b) \times h$
C. 1. F **2.** T **3.** T **4.** T
5. F
D. 1. Yes, $6^2 + 8^2 = 10^2$
3. 100 litres. **4.** 0% **5.** 30 days **6.** ₹14375
7. 50 ft. **8.** 36 minutes
9. (*a*) Bus (*b*) $\frac{1}{12}$ (*c*) 216 children
(*d*) Cycle and Two-wheeler
10. 110 cm²
11. (*a*) 30,000 (*b*) July (*c*) March (*d*) 65,000.