

ANSWERS

Chapter 1

Exercise 1.1

- (i) $\frac{84}{24}$ (ii) $\frac{-16}{24}$ (iii) $\frac{-18}{24}$ (iv) $\frac{-16}{24}$
- (i) $\frac{18}{21}$ (ii) $\frac{25}{24}$ (iii) $\frac{5}{6}$ (iv) $\frac{37}{45}$
- (i) $\frac{5}{3} \Rightarrow \frac{5}{3}$ lies between 1 and 2. (ii) $\frac{-8}{3} \Rightarrow \frac{-8}{3}$ lies between -2 and -3.
- (iii) $\frac{13}{7} \Rightarrow \frac{13}{7}$ lies between 1 and 2. (iv) $\frac{-29}{9} \Rightarrow \frac{-29}{9}$ lies between -3 and -4.
- (i) $\frac{8}{13} > \frac{5}{13}$ (ii) $\frac{7}{14} > \frac{7}{18}$ (iii) $\frac{-17}{51} < \frac{-18}{72}$ (iv) $\frac{27}{56} > \frac{34}{72}$
- (i) $\frac{7}{11}$ (ii) $\frac{15}{17}$ (iii) $\frac{7}{9}$ (iv) $\frac{4}{7}$ (v) $\frac{3}{6}$
- (i) A rational number (ii) order (iii) 0 (iv) 1 (v) $\frac{-3}{5}$
- (i) $<$ (ii) $<$ (iii) $>$ (iv) $<$ (v) $>$ (vi) $>$
- (i) $\frac{-2}{3} < \frac{4}{-9} < \frac{-5}{12} < \frac{7}{-18}$ (ii) $\frac{-3}{4} < \frac{-7}{16} < \frac{5}{-12} < \frac{9}{-24}$
- (iii) $\frac{-11}{15} < \frac{-7}{10} < \frac{-13}{20} < \frac{3}{-5}$ (iv) $\frac{-9}{14} < \frac{-4}{7} < \frac{-23}{42} < \frac{13}{-28}$

Exercise 1.2

- (i) $\frac{5}{7}$ (ii) $\frac{20}{13}$ (iii) $\frac{2}{15}$ (iv) $\frac{-29}{36}$
- (i) $\frac{11}{36}$ (ii) $\frac{-29}{150}$ (iii) $\frac{-1}{3}$ (iv) $\frac{2}{5}$
- (i) $\frac{3}{7}, \frac{-6}{9}$ (ii) $\frac{-15}{17}$ (iii) 0 (iv) $\frac{-5}{14}$ (v) $\frac{18}{27}, \frac{21}{23}$ (vi) $\frac{2}{9}$
- (i) $\frac{7}{8}$ (ii) $\frac{-10}{11}$ (iii) -1 (iv) $\frac{2}{3}$
- (i) $\frac{-18}{42}$ (ii) $\frac{39}{192}$ (iii) $\frac{-216}{400}$ (iv) $\frac{270}{432}$ (v) $\frac{-714}{1190}$ (vi) $\frac{-4704}{8640}$ (vii) $\frac{-1680}{3240}$ (viii) $\frac{175000}{1155000}$
- (ix) $\frac{-48672}{949104}$
- (i) $\frac{8}{360}$ (ii) $\frac{-1908}{1512}$ (iii) $\frac{-80}{1344}$
- (i) $\frac{9}{-2}$ (ii) $\frac{1}{-7}$ (iii) $\frac{8}{5}$ (iv) -13
- 46
- $\frac{-3}{2}$
- $\frac{129}{4}$
- $1\frac{61}{92}$
- (a) - (iv) (b) - (v) (c) - (vi) (d) - (iii) (e) - (i) (f) - (ii)

Exercise 1.3

- $6\frac{2}{5}$ hours
- $93\frac{3}{4}$ cm
- $-10\frac{10}{11}$
- 9 pieces
- (i) $\frac{31}{10}$ (ii) $\frac{49}{135}$ (iii) $\frac{-1}{6}$
- 1
- $\frac{11}{24}$

Exercise 1.4

1. (i) $\frac{7}{24}$ 2. $-1, 1$ 3. $\frac{-11}{4}, \frac{-10}{4}, \frac{-9}{4}$ 4. $\frac{8.1}{12}, \frac{8.2}{12}, \frac{8.5}{12}$ 5. $-0.4, -0.5, -0.6, -0.7, -0.8, -0.9$
6. $\frac{-1}{12}, \frac{1}{12}, \frac{2}{12}, \frac{3}{12}$ $\frac{9}{12}$ 7. $\frac{-2}{13}, \frac{-1}{13}, \frac{1}{13}, \frac{2}{13}, \frac{3}{13}$ $\frac{8}{13}$
8. $1.9, 1.8, 1.7, 1.6, 1.5$
9. (i) T (ii) F (iii) T

Rapid Assessment

- A. (iii) 2. (i) 3. (iii) 4. (iv) 5. (iii) 6. (iv) 7. (b)
- B. 1. T 2. F 3. F 4. F 5. T
- C. 1. additive inverse 2. rational number negative rational 3. a negative rational 4. not
5. $3;4$ 6. x
- D. 1. closure property of multiplication 2. none 3. countless 4. 0
5. -1 and 1 6. mean

E. Assertion and Reason

1. (iv) 2. (i) 3. (ii) 4. (iii)

Mental Maths

1. $\frac{5}{6}$ 2. $\frac{-25}{32}$ 4. $\frac{-331}{234}$

Chapter 2

Exercise 2.1

1. (i) $\left(\frac{5}{7}\right)^4$ (ii) $\left(\frac{-11}{12}\right)^3$
2. (i) $\left(\frac{5}{8}\right)^2$ (ii) $\left(\frac{11}{12}\right)^2$ (iii) $\left(\frac{-1}{2}\right)^5$ (iv) $\left(\frac{9}{10}\right)^2$ (v) $\left(\frac{3}{4}\right)^5$ (vi) $\left(\frac{-3}{5}\right)^3$ (vii) $\left(\frac{x}{y}\right)^6$ (viii) $\left(\frac{a}{3b}\right)^3$
3. (i) $\frac{1}{125}$ (ii) $\frac{1}{81}$ (iii) $\frac{-27}{64}$ (iv) $\frac{-1}{125}$ (v) $\frac{9}{16}$ (vi) $\frac{(-a)^3}{b^6}$ (vii) $\frac{x^2}{16}$ (viii) $\frac{-1}{c^5}$
4. (i) $\frac{1}{27}$ (ii) $\frac{1}{16}$ (iii) 32 (iv) $\frac{1}{108}$

Exercise 2.2

1. (i) 7 (ii) $\left(\frac{-5}{3}\right)^7$ (iii) $\left(\frac{11}{17}\right)^2$ (iv) $\left(\frac{3}{5}\right)^6$ (v) $\left(\frac{1}{2}\right)^6$ (vi) 1 (vii) $\left(\frac{1}{2}\right)^{10}$ (viii) $\left(\frac{2}{3}\right)^{+6}$
(ix) 5^4 (x) $8^5 \times 5^2$
2. (i) $x = -6$ (ii) $x = 1$ (iii) $x = 1$
3. 16 4. 1 5. 16384 6. $\frac{32}{729}$ 7. $\frac{27}{32}$
9. (iii) and (v)
10. (i) 8 (ii) -4
11. (i) $-(e)$ (ii) $-(f)$ (iii) $-(d)$ (iv) $-(b)$ (v) $-(a)$ (vi) $-(c)$

Exercise 2.3

- 3.75×10^{-7}
 - 5.06289×10^2
 - 9.28×10^{12}
 - 3×10^{-8}
 - 4.603×10^{-2}
 - 4.78×10^{-1}
- 0.0000000325
 - 40830
 - 0.0000917
 - 20001000000
 - 0.0000000008
 - 7900
- $1.49 \times 10^{11} \text{m}$
- Diameter of the sun is approximately 110 times to the diameter of the earth.

Rapid Assessment

- - (iii)
 - (i)
 - (i)
 - (ii)
 - (iii)
 - (ii)
- 1.2^6
 - negative
 - 1.0×10^{-10}
 - 1.234×10^7
- 3410000
 - 0
 - $\left(\frac{1}{3}\right)^{-5}$
- T
 - T
 - T
 - F
 - T
 - F
 - F
- (e)
 - (d)
 - (f)
 - (b)
 - (a)
 - (d)
 - (g)
 - (c)
- $\frac{2048}{P}$
 - $\frac{1}{-b}$
 - $\frac{P^4}{250}$
 - $\frac{19683}{64}$
 - 6,100,000,000
 - 6×10^9

Mental Maths

- 5
- 0
- 1
- 9
- 2.59×10^{11}

F. Assertion and Reason

- (iv)
- (i)
- (iv)

Chapter 3

Exercise 3.1

- 576
 - 256
 - 1024
 - 1089
 - 1296
- 225
 - 324
 - 12.25
 - $\frac{1}{36}$
- 25
 - 50

Exercise 3.2

- 5
 - 1
 - 4
 - 1
 - 6
 - 0
 - 9
 - 6
 - 4
 - 6
- (i), (ii), (iv) and (v)
- $1 + 3 + 5 + 7 + 9 + 11 + 13 + 15$
 - $1 + 3 + 5 + 7 + \text{_____} + 25$
- 441, 1089, 5929
 - 64, 196, 324
- 17
 - 3
 - 8
 - 219
- $9^2 - 1$
 - $20^2 - 1$
 - $33^2 - 1$
 - $100^2 - 1$
- $65^2 = 6 \times (6 + 1) \text{ hundred} + 25 = 4225$
 - $85^2 = 8 \times (8 + 1) \text{ hundred} + 25 = 7225$
 - $105^2 = 10 \times (10 + 1) \text{ hundred} = 11025$
 - $215^2 = 10 \times (21 + 1) \text{ hundred} = 46225$
- $7^2 + 8^2 + 56^2 = 57^2$, $11^2 + 12^2 + 132^2 = 133^2$
- T
 - T
 - F
 - F
 - F
 - T
 - F

Exercise 3.3

1. (i) 1296 (ii) 3249 (iii) 1764 (iv) 841 (v) 5776
2. (i) 9409 (ii) 161604 (iii) 11,025 (iv) 9604 (v) 94,864
3. (i) 729 (ii) 1936 (iii) 3136 (iv) 1024 (v) 4096
4. (i) 10609 (ii) 9604 (iii) 11236 (iv) 38025 (v) 2,55,025
5. (i) 39601 (ii) 10,609 (iii) 8281 (iv) 40,804 (v) 156025 (vi) 996004
6. (i) 4225 (ii) 9604 (iii) 10404 (iv) 9025 (v) 8281 (vi) 11664

Exercise 3.4

1. (i) 3 (ii) 3 (iii) 2 (iv) 3 (v) 2 (vi) 6
2. (i) 2 (ii) 6 (iii) 2 (iv) 1 (v) 8 (vi) 6
3. (i) 26 (ii) 35 (iii) 112 (iv) 210 (v) 316 (vi) 512
4. (i) 495 (ii) 67 (iii) 22 (iv) 19565 (v) 5
5. 561 6. 9801 7. 300 8. 300 9. 1024 10. 129m 11. 84cm 12. 4l

Exercise 3.5

1. (i) 4.2 (ii) 15.02 (iii) 0.0197
2. 2.646 3. 7.2 4. $5.49m$ 5. 872, 7.848
6. (56,87), 4.613 7. (25,21), 0.525

Rapid Assessment

- | | | | | | | | |
|-------------|-------------|----------|---------|----------|--------|----------|----------|
| A. 1. (ii) | 2. (iv) | 3. (iii) | 4. (i) | 5. (iii) | 6. (i) | 7. (iii) | 8. (iii) |
| B. 1. odd | 2. 12,35,37 | 3. 199 | 4. 3 | 5. 0.36 | | | |
| C. 1. (iii) | 2. (iv) | 3. (i) | 4. (iv) | | | | |

Mental Maths

1. 0.59 2. Do yourself 3. 12 4. 2

Chapter 4

Exercise 4.1

1. (i) 5832 (ii) 46,656 (iii) 85,184 (iv) 4,21,875
(v) 9,70,299 (vi) 11,24,864 (vii) 123,26,391 (viii) 1,40,608
2. (i) Yes (ii) No (iii) No (iv) Yes
3. (i) 7 (ii) 8 (iii) 5 (iv) 4 (v) 9 (vi) 2
4. Cubes of even numbers – 64, 216
Cubes of odd numbers – 2197, 3375, 4913
5. 64
6. (i) 4 (ii) 20 (iii) 3 (iv) 4
7. (i) 2 (ii) 2 (iii) 2 (iv) 165
8. $43 + 45 + 47 + 49 + 51 + 53 + 55 = 7^3$
9. (i) 721 (ii) 7351
10. 18 cuboid

Exercise 4.2

2. (i) 4 (ii) 8 (iii) 12 (iv) 18 (v) 77
3. None

4. (i) -13 (ii) -140 (iii) -63 (iv) -56
 5. (i) $\frac{9}{16}$ (ii) $\frac{-3}{16}$ (iii) $\frac{5}{40}$ (iv) $\frac{7}{55}$
 6. $x = 5$
 7. (i) 20 (ii) 88 (iii) 59.36
 8. (i) 24 (ii) 4 (iii) 9.7 (iv) $120a^2$ (v) 70
 9. 3; 18 10. 14, 28, 42

Rapid Assessment

- A. 1 (ii) 2 (iii) 3 (i) 4 (iv) 5 (iv)
 6 (iii) 7 (ii) 8 (i) 9 (ii) 10 (iv)
 B. 1. 2744 2. 2 3. 64 4. 7 5. 3
 6. 13
 C. 1. T 2. T 3. F 4. T 5. T
 6. T 7. F 8. F 9. T 10. F
 D. 1 (iv) 2 (i) 3 (iii)

Brain Storming

1. 5.5 m , 66.375 m^3
 2. (a) Even (b) Even (c) Even
 3. (a) $3\frac{1}{3}$

Fun with maths

1. One 2. 9 3. 18 4. 54

Chapter 5

Exercise 5.1

1. (i)

6	1	8
7	5	3
2	9	4

(ii)

14	4	1	15
7	9	12	6
11	5	8	10
2	16	13	3

2. (i) $100 \times 1 + 10 \times 4 + 5$ (ii) $100 \times 9 + 10 \times 8 + 7$
 (iii) $100 \times 1 + 0 + 9$ (iv) $100 \times 4 + 1 \times 10 + 0$
 3. (i) 328 (ii) 500 (iii) 211 (iv) 753
 4. (i) 7 (ii) 11
 5. (i) 9 (ii) 6
 6. (i) 5 (ii) 9
 7. (i) 163.5 (ii) 17.67 (iii) 654
 (iv) 53.02 (v) 54.5 (vi) 4.41

Exercise 5.2

1. (i) 3 (ii) 2,4 (iii) 3,5 (iv) 0,4,8 (v) 1 (vi) 5
 2. (i) F (ii) F (iii) T (iv) T (v) T
 3. 3 4. 1 5. 2 6. 7 7. 9 8. 0,9 9. 0,3,6,9 10. 1,4,7
 11. 0,3,6,9 12. 0,6 13. 1,4,7 14. 0,4,8 15. 0,2,4,6,8
 16. (i) 1 (ii) 3 (iii) 7 (iv) 2
 17. (i) 2 (ii) 3 (iii) 5 (iv) 5

Exercise 5.3

- $$\begin{array}{r} 108 \\ + 52 \\ \hline 160 \end{array}$$
 - $$\begin{array}{r} 2495 \\ + 1432 \\ \hline 3927 \end{array}$$
 - $$\begin{array}{r} 5923 \\ + 7746 \\ \hline 13669 \end{array}$$
 - and (v) Do yourself
- 3, 8, 13, 18, 23, 28
 - 2, 10, 50, 250, 1250, 6250
 - 1, 3, 6, 10, 15, 21, 28
 - 28, 27, 64, 125, 216, 343
 - 1, 4, 9, 16, 25, 36, 49
- 1234567654321
 - 1234321
- 78

Rapid Assessment

- | | | | | | | | |
|------------|----------|---------|------------|---------|---------|--------|----------|
| A. 1. (i) | 2. (iii) | 3. (i) | 4. (iv) | 5. (i) | 6. (i) | 7. (i) | 8. (iii) |
| 9. (iv) | | | | | | | |
| B. 1. 9. | 2. 9, 1 | 3. 9 | 4. 1, 4, 7 | 5. 6, 3 | 6. 2, 4 | 7. 7 | 8. 4 |
| 9. 0 | 10. 0 | | | | | | |
| C. 1. F | 2. F | 3. F | 4. F | 5. F | | | |
| D. 1. (ii) | 2. (i) | 3. (iv) | 4. (iii) | | | | |

Chapter 6

Exercise 6.1

- (i), (v), (vii)
- Mono – (iii), Bi – (ii), (iv) Tri – (i), (v), (vi), (vii), (viii)
- 2
 - 7
 - 1
 - 5
 - 3
 - 9
- Linear – (iii), (iv) quad (i) (vi) (vii) cubic – (ii), (v)
- $5a^2 - 2ab - 2b^2$
 - $5p^2q^2$
 - $-7px + qy + 12rz$
 - $\frac{16}{14}xy - \frac{37}{10}y - \frac{23}{35}x$
 - $7p^2 - 17pq + 5q^2 + 8$
 - $\frac{19}{6}x + 2x^2 + \frac{25}{6}x^3 + \frac{28}{15}$
- $-12x^2 + 8x$
 - $5ab^2 - 4ab$
 - $7n^2 + 22mn - 9m^2n$
 - $-4x^2 - 4x + 13$
 - $8a - 2ab + 2b - 15$
- $8a^2b - 12b^2 + 9ab$
 - $-2xy^2 + 8xy + 19y^2$
 - $16x^2y^2 + 6xy - 10x$
 - $16x^2 - 76x + 28$

Exercise 6.2

- $-9p^7q^3$
 - $-45a^3b^2c^3$
 - $-3l^2m^3n + \frac{18}{4}lm^2n^3$
 - $-30a^3b^3c$
 - $24b^4c^3$
- $-12a^3$
 - $-8a^4b^4$
 - $a^2b^3c^3$
 - $-90x^{20}$
 - $-300p^3q^3$
- $9a^2 + 3a$
 - $-6a^3 - 16a^2$
 - $8x^3 - 4x^2y$
 - $15p^2q - 20pq^2$
- $\frac{5}{4}x^4y - \frac{1}{2}x^3y^2$
- $\frac{3}{8}p^2q^2 + \frac{1}{6}p^3q$
 - $-21a^3b^5 + 12a^2b^4$
 - $\frac{1}{2}x^4 + \frac{6}{5}x^2$
 - $-3l^2m^3n + \frac{9}{2}l^2n^3$
- $2q^2 + 2qr + 2qs$
 - $xy + 5y - yz$
 - $3l^4m^2 + 3l^2m^4 - 3l^2m^2$
 - $-2a^3b - 2ab^3$
- $6a^2$
 - $20x^3y^4$
 - $80a^5 + 16a^3b$
- $48x^2$
 - y^2
- $4a^3b + 7a^2b^2 - 2a^2b^3$
 - $2x^2 - 6xy^2 - 6xy - x^2y$
 - $-2p^3q + 4p^2q^2 - 12pq^3 - 3q^3$
 - $5l^2 + 25ln$

Exercise 6.3

- $6x^2 - x - 2$
 - $2x^2 - 5x - 12$
 - $\frac{1}{100}a^2 - b^2$
 - $-15x^2 - 32xy + 7y^2$
- $5p^2q - p^3q^3 - 10 + 2pq^2$
 - $12x^3y - 8x^4 - 3xy^4 + 2x^2y^3$
- $x^3 - 2x^2 + 3x - x^2y + 2xy - 3y$
 - $9x^3 - 9x^2y + 5xy^2 - y^3$
- $7x^4 - 5x^3 - 5x^2 + 5x - 2$
 - $512a^3 + 440a^2b + ab^2 + 7b^3$
- $14a^2 - 17ab + 5b^2$
 - $\frac{1}{10}p^2q^2 - \frac{5}{2}pq + 15$
- $3y^4 - 21y^3 + 14y^2 - 14y + 8$
 - $m^3 - 4m^2n + 8mn^2 - 5n^3$
- $5x^2 + 2xy - 4y^2$
 - $2b^3c - 7a^2b^2c + 5a^2 + 26abc - a^3b$
 - $-7x^2 - 4y^2 + 3xy$
- $2a^4 + 2b^4$
 - $5x^2 - 14y^2 + 3x - 21y - 2xy$
 - $4x^2 + y^2 - 3xy$
- $-4x^4 + x^2y + 3xy^2 + 5x^3$
 - $-4x^2y + 4xy^2 + 14x^2 - 10xy + 10y^2$
 - $6y^2 - y + 1$
- $a^2 - b^2 + ac - bc$
 - $a^2 - b^2 + ac + bc$
- $6a^2 + 13ab + 6b^2$
 - $30a^2 + 69ab + 27b^2$
 - $2x^4 - 3x^2y^2 - 2y^4$
- $p^4 - q^4$
 - $4x^2y^2 - 8x^4y + 24y^3$
- $x^2 - xy - 2y^2 + xz - 2yz$
 - $2l^2 - 3lm - 2m^2 + 2ln + mn$
 - $2x^3 - 9x^2 + 13x - 6$
- $-5a^2b^2 + 3a^3b - 2ab^3$
 - $21xy^3 + 56x^3 + 12y^4 + 32x^2y^2$

Exercise 6.4

- $4a^2b$
 - $-4r^2$
 - $5xy$
 - $-6lm$
 - $4xy^3$
- $3x + 2y - z$
 - $\frac{5}{3}a - 2$
 - $3y^6 - 4y^4 + 5y^2$
 - $\frac{1}{2}x^2 + x + \frac{3}{2}$
- $Q = y + 2, R = 0$
 - $Q = x + 12, R = -56$
 - $Q = x^3 + 3x^2, R = 0$
 - $Q = x^2 - x + 3, R = 0$
- $Q = 9x^2 + 6x + 4, R = 0$
 - $Q = 12y^2 + 14y + 22, R = 63$
 - $Q = 3x^2 + x - 4, R = -15$
- $Q = 2a^2 - a, R = 1$
 - $Q = 2y^2 + 3y - 4, R = 0$

Exercise 6.5

- $y^2 + 6y + 9$
 - $9x^2 - 24xy + 16y^2$
 - $a^2 + \frac{4a}{b} + \frac{4}{b^2}$
 - $x^4y^2 - 2x^3y^3 + x^2y^4$
- $25x^2 - 10xy + y^2$
 - $\frac{169x^2}{36y^2}$
 - $x^8 - y^8$
 - $4x^6 + 4x^3y + y^2$
- 10201
 - 9801
 - 11025
 - 996004
- 1300
 - 3575
 - 1560
 - 9999.84
- 88
 - 24
 - 113
- 100
 - 5
 - 100
 - $\frac{1}{4}$
- $x^2 + \frac{1}{x^2} = 27, x^4 + \frac{1}{x^4} = 727$
 - $x^2 - \frac{1}{x^2} = 98, x^4 + \frac{1}{x^4} = 9602$
 - $x = 12$
 - $a + \frac{1}{a} = \pm 2\sqrt{5}, a - \frac{1}{a} = \pm 4$
- 8
- 52
- 38
- $\pm 2\sqrt{35}$

Rapid Assessment

- (ii)
 - (iii)
 - (i)
 - (i)
 - (iii)
- 6
 - $a^{16} - b^{16}$
 - $a^2 - b^2 - c^2$
 - 8
- Polynomial
- F
 - F
 - F
 - T
 - F
- (i)
 - (ii)
 - (iv)
 - (iii)

Chapter 7

Exercise 7.1

1. (i) $2 \times 2 \times a \times a \times b$ (ii) $-5 \times 5 \times x \times y \times y \times y$ (iii) $2 \times 3 \times 3 \times 3 \times m \times m \times m \times n \times n$
 (iv) $2 \times 3 \times x \times y \times y \times z \times z \times z$ (v) $4x(2y+3z)$
2. (i) 9 (ii) $5a^2$ (iii) $11a$ (iv) $18mn$ (v) $12x^2y^2z^2$ (vi) 14 (vii) $7b$ (viii) $4ab$
 (ix) $2pq$
3. (i) $6x^2$ (ii) $4m$ (iii) $5a^2b^2$ (iv) $7ab$ (v) $9xyz$ (vi) 3 (vii) 1 (viii) $9xyz$
4. (i) $2x(1+2y)$ (ii) $5x(1-3x)$ (iii) $7pq(3p+7q)$ (iv) $7mn(3m-2n)$ (v) $5x(-2+x^2)$
 (vi) $5(2x^3-3y^3)$ (vii) $2(a^2b-a^2+b^2)$ (viii) $x(xyz-4y^3+20x^2)$
5. (i) $-3x(3x+9y+1)$ (ii) $yz(x+1)$ (iii) $2x^3(x^2-x+1)$ (iv) $y^2\left(\frac{5}{16}x^2-9z^2\right)$
 (v) $5p^2(2p+5p^2q-3q^2)$

Exercise 7.2

1. (i) $(a+b)(x^2+y^2)$ (ii) $(x-y)(a+b)$ (iii) $(a+b)(x+y)$ (iv) $(a+b)(a+c)$
2. (i) $(6a-b)(b+2c)$ (ii) $(x-2y)(x^2+3y^2)$ (iii) $(l^2x-ly-lz)(l+1)$ (iv) $(x^2-2x-y)(x^2-2x-3)$
3. $(ax+by)(bx+ay)$ 4. $(x-a)(x-2b)$ 5. $(x-y)(x+y^2)$
6. (i) $(3x+y)(3x-4)$ (ii) $(x+2a)(ay^2+3)$

Exercise 7.3

1. (i) $(3x+2)(3x-2)$ (ii) $(x+9)(x-9)$ (iii) $\left(\frac{a}{2}+\frac{b}{3}\right)\left(\frac{a}{2}-\frac{b}{3}\right)$
 (iv) $(7p+6)(7p-6)$ (v) $(ab+4)(ab-4)$ (vi) $(2a^2b^2+5pq)(2a^2b^2-5pq)$
 (vii) $4(2a+b)(b-a)$ (viii) $(a+b-c)(a-b+c)$ (ix) $(2a+3b+2c)(2a+3b-2c)$
 (x) $-12a(a+b)$
2. (i) $(x+2y)(x+2y)$ (ii) $(a-6)(a-6)$ (iii) $(5x+3)(5x+3)$ (iv) $(11m-4n)(11m-4n)$
 (v) $(3a-b)(3a-b)$ (vi) $(5x^2-y^2)^2$
3. (i) $x(x-2y)$ (ii) $(5m+n+7l)(5m+n-7l)$ (iii) $2(x+y+2)(x-y+2)$
 (iv) $(x^2-4y^2+11)(x^2-4y^2-11)$ (v) $(p-q)(p-q)$
4. $\frac{2}{x}+\frac{x}{2}$ units 5. $4(t^2-3)$ cm

Exercise 7.4

1. (i) $(x+1)(x+2)$ (ii) $(x-3)(x-4)$ (iii) $(y-5)(y-16)$ (iv) $(b+8)(b+12)$
 (v) $(a-7b)(a-7b)$ (vi) $(ky-3)(xy-3)$ (vii) $(m-5n)(m-8n)$ (viii) $(a+5)(a-17)$
 (ix) $(xy+3)(xy-8)$ (x) $(11+x)(10-x)$
2. (i) $(x+2)(5x+1)$ (ii) $(2x+3)(3x-1)$ (iii) $(3x+1)(2x-3)$ (iv) $(x-7)(3x+2)$
 (v) $(8x+y)(3x-4y)$ (vi) $(1+7x)(5-3x)$ (vii) $(5+4x)(4-5x)$ (viii) $(8-9x)(3+8x)$
3. Do yourself 4. Do yourself

Exercise 7.5

1. (i) $3a$ (ii) $36x^4y^4$ (iii) 14 (iv) xy (v) $12abc$
2. (i) $3y(2x+5)$ (ii) $2y(x+5)$ (iii) $3(p-8)(q-8)(r-pq)$ (iv) $\frac{1}{2}(y+4)(y-2)$
 (v) $(x-1)(x-2)(x-3)$
3. (i) $(x+15)$ (ii) $x-7$ (iii) $x-2$ (iv) $2x-17$ (v) $x-8$

4. (i) $x - 9$ (ii) $x + 12$ (iii) $2x$ (iv) $3x - 2$ (v) $3(x + 4)$
 5. $(5a - b - 7c)$
 6. (i) $3y + 2y + 7y - 14y = -2y$ (ii) $(2y)^2 + 8(2y) - 7 = 4y^2 + 16y - 7$
 (iii) $(2x)^2 + 7x = 4x^2 + 7x$ (iv) $(y - 4z)^2 = y^2 - 2 \times y \times 4z + (4z)^2 = y^2 - 8yz + 16z^2$
 (v) $(z + 5x)^2 = z^2 + 2 \times z \times 5x + (5x)^2 = z^2 + 10zx + 25x^2$

Rapid Assessment

- A. 1. (c) 2. (a) 3. (a) 4. (d) 5. (a) 6. (a) 7. (d) 8. (b)
 B. 1. Factorisation 2. ab 3. 32400 4. $9x^2 + 2y^2$ 5. x
 6. $2mn(9 + 5p)$ 7. $(2y - 3)(2y - 3)$ 8. distributive 9. $a^2 + b^2$
 10. $2ab - 2b^2$
 C. 1. F 2. F 3. T 4. F 5. F
 6. F 7. F 8. F 9. T 10. T
 D. 1. (i) $(x - a)(x - b)$ (ii) $(xy + 2)(9x^2y + 4)y$ (iii) $(a^2 - 3)(a^2 + 3)(a^4 + 9)$ (iv) $x(5 - x^2)(5 + x^2)$
 2. (i) $\left(x - \frac{1}{x}\right)\left(x - \frac{1}{x}\right)$ (ii) $(16 - x)(2 + x)$ (iii) $(x^2 + 4xy + 4y^2 + 1)(x + 2y + 1)(x + 2y - 1)$
 (iv) $(x - 3y)(x + 6y)$ (v) $(2x - 5)(3x + 4)$

Chapter 8

Exercise 8.1

1. (i) $\frac{13}{5}$ (ii) $\frac{35}{8}$ (iii) $\frac{72}{5}$ (iv) 18 (v) 12 (vi) $\frac{-1470}{139}$ (vii) 61 (viii) $\frac{-60}{299}$

Exercise 8.2

1. (i) $x = 3$ (ii) $x = 2$ (iii) $x = 4$ (iv) $x = 4$
 (v) $x = \frac{-35}{9}$ (vi) $x = 31\frac{1}{2}$ (vii) $x = 37$
 2. (i) $x = \frac{15}{7}$ (ii) $x = -3$ (iii) $x = 5$ (iv) $x = \frac{-3}{2}$
 (v) $x = \frac{-3}{11}$ (vi) $x = \frac{-96}{25}$ (vii) $y = \frac{15}{17}$
 3. (i) $x = -5$ (ii) $x = 8$ (iii) $x = \frac{-4}{5}$ (iv) $x = 1$ (v) $x = 3$
 4. (i) $x = 1$ (ii) $x = 1$ (iii) $x = \frac{-23}{6}$

Exercise 8.3

1. 7 2. 15, 16 3. $\frac{13}{21}$ 4. 62
 5. ₹ 3000 notes of ₹ 50, 4000 notes of ₹ 20 and 5000 notes of ₹ 10
 6. 20 coins of ₹ 1, 60 coins of ₹ 2, 120 coins of ₹ 5 7. 20 8. 20, 28 years
 9. 72 10. 40 years, 10 years 11. $40^\circ 50'$ 12. 13 cm, 9 cm
 13. 12 cm, 20 cm

Rapid Assessment

- A. 1. (i) 2. (ii) 3. (iv) 4. (iv) 5. (iv) 6. (iii) 7. (ii) 8. (ii)
 9. (iii) 10. (iv)
 B. 1. solution 2. $19n$ 3. $4x + 15 = 39$ 4. $x = 1$ 5. 3
 C. 1. F 2. F 3. F 4. F 5. F
 D. 1. $x = 2$ 2. $x = 10$ 3. $x = 6$ 4. $m = \frac{1}{5}$
 E. 1. (iii) 2. (ii) 3. (ii)

CHAPTER 9

Exercise 9.1

1. (i) $100 : 9$ (ii) $9 : 2$ (iii) $10 : 7$ (iv) $7 : 15$ (v) $325 : 18$ (vi) $125 : 19$
2. (i) 16 (ii) 15 (iii). 2 (iv) 37.5
3. $135^\circ, 90^\circ, 45^\circ, 90^\circ$
4. (i) $12 : 1$ (ii) $4 : 9$ (iii) $2 : 7$ (iv) $1 : 2$ (v) $3 : 2$
5. $89 : 85$ 6. ₹ 26250
7. (i) 25 (ii) 7 (iii) 16 (iv) 8 (v) 1

Exercise 9.2

1. (i) All, proportion (ii) None (iii) None (iv) Except = $\frac{6}{180}$, Prop. = $\frac{1}{30}$

2. (i)

x	7	9	13	21	25
y	21	27	39	63	75

(ii)

x	2.5	5	7.5	10	11	12
y	2.5	5	7.5	10	11	12

(iii)

x	0.1	0.5	2	8	32
y	0.4	2	8	32	128

3. (i) ₹ 600 (ii) ₹ 900 K = 60
4. 80 tools 5. 20 kg 6. 180 km
7. (i) $K = 2.4$ (ii) $y = 28.8$ (iii) $x = 25$
8. 6200 books 9. 10 stamps 10. ₹ 8 11. 24 bottles 12. 85 words
13. ₹ 435 14. 2.7 cm 15. 252 steps 16. 50 men

Exercise 9.3

1. (i) No (ii) Yes 2. 16 men 3. 168 men
4. (i) $y = 6$ (ii) $x = \frac{25}{4}$ (iii) $y = 30$ (iv) $x = \frac{1}{5}$
5. $2\frac{1}{2}$ kg 6. 1 hr 36 min 7. 88 cows
8. increase by 12 km/h 9. 4 km/h 10. 20 cycles 11. 224 men
12. 16 days 13. 16 days 14. 24 days 15. 16 days
16. 20 cycles 17. do yourself 18. 30 cows 19. 18 days
20. 27 days 21. 50 days

Exercise 9.4

1. 48 days 2. 15 days 3. 90 days 4. 10 days 5. 36 seconds 6. 12 minutes
7. 5.33 hour 8. 8 hour 9. 9 hours 10. 6 pm

Rapid Assessment

- A. 1. (b) 2. (a) 3. (c) 4. (d) 5. (b) 6. (a) 7. (a) 8. (b)
9. (c)
- B. 1. 9 hrs 2. Direct, Directly 3. $5\frac{1}{3}$ 4. Directly 5. 90 6. 24 hrs
- C. 1. False 2. True 3. False 4. False 5. True

Puzzle

- | | | | |
|-------------|-------------|------------------------|---------------|
| 1. Directly | 2. Indirect | 3. Unitary | 4. Equivalent |
| 5. Less | 6. Constant | 7. Proportion, Product | 8. Increase |
| 9. Decrease | | | |

CHAPTER 10

Exercise 10.1

- Open– (i), (iv); Closed– (ii), (iii)
- Simple closed– (ii), (iii); Not simple closed– (i), (iv)
- (i) No (ii) Yes, Convex (iii) Yes, Convex (iv) Yes, Concave
- (i) 2 (ii) 20 (iii) 0
- Do it yourself

Exercise 10.2

- (i) line segment (ii) 7 (iii) triangle (iv) two (v) concave
(vi) equiangular and equilateral (vii) 360° (viii) 360° (ix) 60°
- (i) 20° (ii) 15° (iii) 18° (iv) 30°
- (i) 15 (ii) 24 (iii) 40 (iv) 30
- $72^\circ, 120^\circ, 48^\circ, 120^\circ$ 5. $75^\circ, 85^\circ, 95^\circ, 105^\circ$ 6. $60^\circ, 100^\circ$
- (i) 1080° (ii) 1800° (iii) 2080° (iv) 3240°
- (i) 110° (ii) 140° (iii) 140° (iv) 74°

Exercise 10.3

- (i) perpendicular (ii) adjacent (iii) parallel (iv) opposite
(v) adjacent (vi) base (vii) diagonals
- $65^\circ, 115^\circ, 65^\circ, 115^\circ$
- (i) Yes (ii) No (iii) No
- 5 cm 5. $x = 60^\circ, y = 32^\circ, z = 58^\circ$ 6. (i), (iii), (iv), (viii), (x) 7. 8 cm
- (i) 40° (ii) 40° (iii) 100°
- (i) $AB \parallel DC, BC \parallel AD$ (ii) $\angle A$ and $\angle C, \angle B$ and $\angle D$ (iii) $\angle A = \angle C, \angle B = \angle D$
(iv) $\angle A$ and $\angle B, \angle B$ and $\angle C, \angle C$ and $\angle D, \angle A$ and $\angle D$ (v) $DA = BC, DC = AB$
- (i) $\angle Q = 80^\circ$ (ii) $\angle R = 100^\circ$ (iii) $\angle S = 80^\circ$
- $DA = 7$ cm, $CD = 9$ cm
- (i) $DA = DC, AB = BC$ (ii) $\angle A$ and $\angle C, \angle B$ and $\angle D$ (iii) $\angle DOA, \angle DOC, \angle AOB, \angle COB$
- (i) $x = 70^\circ, y = 110^\circ$ (ii) $x = 10, y = 3$ (iii) $x = 4, y = 8$ (iv) $x = 75^\circ, y = 105^\circ$
- $x = 3, QS = 20$ units 15. 20 cm and 25 cm
- (i) Parallelogram (ii) Rhombus, Square (iii) Square, Rectangle
- (i) Rhombus, Square (ii) Rectangle, Square
- Do it yourself

Rapid Assessment

- | | | | |
|---------------------|------------|------------------|----------------------|
| A. 1. (ii) | 2. (ii) | 3. (ii) | 4. (iv) |
| 5. (iii) | 6. (i) | 7. (iv) | 8. (i) |
| B. 1. parallelogram | 2. rhombus | 3. opposite, all | 4. all, all, regular |
| 6. sides | | | 5. 40 cm |
| C. 1. T | 2. F | 3. F | 4. F |
| | | 5. T | 6. T |
| | | 7. T | 8. T |
| D. 1. (iv) | 2. (iv) | | |

Mental Maths

1. $60^\circ, 120^\circ$
2. $110^\circ, 70^\circ, 110^\circ$
3. True
4. 6 cm each
5. Yes
6. No
7. $37^\circ, 143^\circ, 37^\circ, 143^\circ$
8. 18 cm
9. $a = 30^\circ, b = 35^\circ, \angle Q = 115^\circ$

CHAPTER 11

Exercise 11.1

1. 100 cm^2 (area of square is more)
2. 320 tiles
3. ₹ 1638
4. 12 m; 2 m
5. 16 cm
6. $9\sqrt{3} \text{ sq. cm}$
7. 8 sq. cm
8. 24 cm^2
9. 32 cm
10. 2200 cm^2
11. 120 cm
12. 26 cm^2

Exercise 11.2

1. (i) 140 cm^2 (ii) 55 cm^2
2. 1644 cm^2
3. 14 cm
4. 8.4 m
5. 128 cm^2
6. 2.1 m^2
7. 347 m^2
8. 15625 m^2
9. 96 cm^2

Exercise 11.3

1. 69 cm^2
2. 214.27 cm^2
3. 301 cm^2
4. 17.5 cm^2
5. (i) 4332 cm^2 (ii) 94672 cm^2
6. 96 cm^2
7. 234 cm^2
8. 432 cm^2

Rapid Assessment

- A. 1. (iii) 2. (iv) 3. (ii) 4. (iii) 5. (ii) 6. (iii) 7. (iii)
- B. 1. $\frac{1}{2}(a+b) \times h$ 2. $\frac{1}{2} \times d_1 \times d_2$ 3. 2 cm 4. 30 cm
- C. 1. F 2. T 3. T 4. F

Mental Maths

1. 332 cm^2
2. 1 : 9
3. 6 cm, 10 cm
4. 1 : 4

Fun with Maths

1. $16\sqrt{3} \text{ cm}$
2. Hexagon
3. $96\sqrt{3} \text{ cm}^2$
4. 16 cm
5. 48 cm

Chapter 12

Exercise 12.1

1. (i) 94 cm^2 (ii) 72 cm^2 (iii) 340 cm^2 (iv) 39.82 cm^2
(v) 243.5 cm^2 (vi) 544 cm^2
2. (i) 384 cm^2 (ii) 864 cm^2 (iii) 1.5 m^2 (iv) 150 dm^2
(v) 8.64 m^2 (vi) 30.375 m^2
3. 3 cm 4. 4375 cm^2 5. ₹ 270 6. 120640 cm^2 , ₹ 120.64 7. 79 m^2 8. ₹ 6960 9. 2250 cm^2
10. (i) $856 \text{ cm}^2, 576 \text{ cm}^2$ (ii) $57.24 \text{ m}^2, 34.84 \text{ m}^2$
11. (i) 13.42 cm (ii) 7.07 cm
12. (i) $121.5 \text{ cm}^2, 81 \text{ cm}^2, 7.79 \text{ cm}$ (ii) $61.44 \text{ m}^2, 40.96 \text{ m}^2, 5.54 \text{ m}$
(iii) $864 \text{ dm}^2, 576 \text{ dm}^2, 20.78 \text{ dm}$ (iv) $13.5 \text{ dm}^2, 9 \text{ dm}^2, 2.60 \text{ dm}$
13. (i) 384 m^2 (ii) 96 dm^2 (iii) 150 cm^2 (iv) 216 m^2

Exercise 12.2

1. $616 \text{ cm}^2, 924 \text{ cm}^2$
2. 3772 cm^2
3. ₹ 28160
4. 2420 m^2
5. 2464 cm^2
6. ₹ 528
7. 0.264 m^2
8. (i) 110 m^2
- (ii) 1.75 m
9. 1500
10. ₹ 677.60
11. 0.55 cm
12. 0.75 m
13. 1584 m^2

Exercise 12.3

1. (i) 960 cm^3
- (ii) 2.1 m^3
- (iii) 3.15 m^3
2. (i) 512 cm^3
- (ii) 1.728 m^3
- (iii) 3375 dm^3
- (iv) 0.343 m^3
3. 64 cubes
4. $3 \text{ cm}, 66 \text{ sq. cm}$
5. 0.5625 m^3
6. 4 m
7. 135000 litres
8. 300 blocks
9. (i) 27 times
- (ii) $\frac{1}{27}$ th
10. 640 soap-cakes
11. 768 gm
12. 4 m
13. 48 children
14. 480 m^2 ₹ 1056
15. 1.28 m

Exercise 12.4

1. 12 cm
2. 59400
3. 27 times
4. 49280 litres
5. 62400 cm^3
6. $16 : 9$
7. $1 : 2$
8. $5 : 3$
9. (i) 4224 cm^3
- (ii) 0.176 m^3
10. 275 l
11. 52.5 cm
12. 69300 cm^3
13. ₹ 844.80
14. 4.2 m
15. $7 \text{ cm}, 2464 \text{ cm}^3$
16. 7040 cm^3

Rapid Assessment

- A. 1. (b)
2. (c)
3. (a)
4. (c)
5. (d)
6. (b)
7. (c)
8. (c)
- B. 1. 616 cm^2
2. 1000
3. 6 cm
4. 1000
5. 5
6. 100.01
7. 5000
8. 5000
- C. 1. F
2. T
3. F
4. F
- D. 1. (i)
2. (ii)

Mental Maths

1. (a) 60 cm^3
- (b) 8 cm^3
2. 1000 cm^3
3. 96 m^2
4. 27 cm^3
5. 5 cm
6. 2 m

Chapter 13

Exercise 13.1

1.

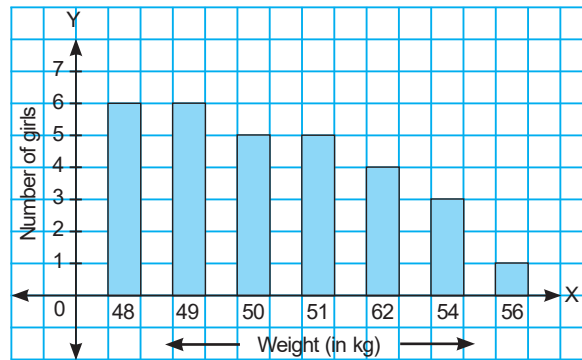
Marks	Tally	Frequency
45		2
48		4
49		1
52		1
55		2
57		1
58		3

61		2
63		4
69		1
83		1
84		3
Total		25

Range = 39

2.

Marks	Tally	Frequency
48		6
49		6
50		5
51		5
52		4
54		3
56		1
Total		30



Weight of 30 girls of a class
Scale: 1 cm = 1 girl

3. Do yourself

4. (i) 20 (ii) 60 (iii) 4 (iv) 20 – 30 (v) 30 – 40 (vi) 10 (vii) 40 – 50

5.

No. of members	Tally marks	No. of families
0 – 2	0	0
2 – 4		6
4 – 6		6
6 – 8		11
8 – 10		2
Total		25

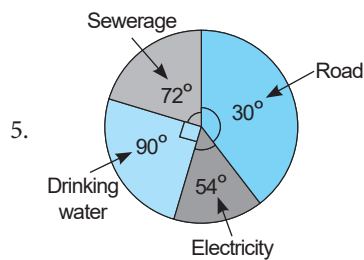
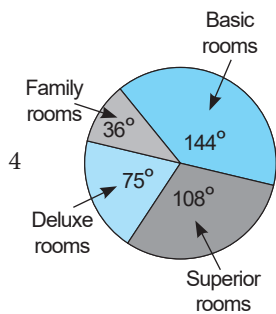
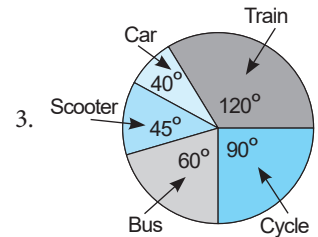
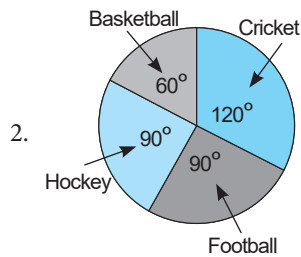
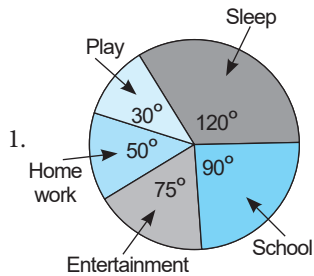
Exercise 13.2

Do it yourself

Exercise 13.3

Do it yourself

Exercise 13.4



6. (i) 1080 (ii) Size XL, 432 (iii) Size S (iv) 108
 7. (i) Hindi (ii) 30 marks
 8. (i) ₹ 32400 (ii) ₹ 14400 (iii) ₹ 7200

Exercise 13.5

1. (i) 7 (ii) 24 (iii) 8.5 (iv) 3
 2. 4.5 3. 5.6 4. 344 5. 9, 11, 17
 6. (i) 11.8 (ii) 23.18 (iii) 3.1 (iv) ₹ 196
 7. (i) 8 (ii) 17 (iii) 3 (iv) no mode
 8. mean = $39\frac{1}{11}$, mode = 16, median = 16
 9. 43, 44 10. 30 11. 10
 12. (i) 28 (ii) 17.5 (iii) 47 (iv) 10
 13. 18 14. 2, 1

Rapid Assessment

- A. 1. (i) 2. (ii) 3. (iii) 4. (i) 5. (iv) 6. (ii) 7. (iii)
 B. 1. raw 2. 20 3. 19 4. Parts 5. 5
 6. bars 7. 20 – 30 8. event 9. 1
 C. 1. T 2. F 3. T 4. T 5. T
 6. F 7. F 8. F 9. T

Brain storming

1. Class mark 2. 360

Puzzle

1. Frequency
2. Class mark
3. Grouped data
4. Upper
5. Raw
6. Range

Chapter 14

Exercise 14.1

1. (i) 15% (ii) 5% (iii) 7.5%
2. (i) 60% (ii) 420% (iii) 125%
3. (i) 4:1 (ii) 1:400 (iii) 1:3 (iv) 1:100 (v) 5:1 (vi) 4:5
4. (i) 20% (ii) 37.5%
5. (i) ₹ 120 (ii) 3 (iii) 16kg
6. (i) 8% (ii) 25% (iii) 12.5%
7. (i) 60 (ii) ₹ 120 (iii) 360l
8. 12 Students 9. 30 10. ₹ 5,83,200 11. 5.06% 12. ₹ 60,000
13. 5000
14. (i) 189 (ii) 2460 (iii) 443.7
15. (i) 756 (ii) 540 (iii) 10.05

Exercise 14.2

1. (i) $P = 17\%$ (ii) $L = 11\%$
2. 6.25% 3. 12.5% 4. $P = 12.5\%$
5. ₹ 25680 6. $P = ₹ 20000; 8\%$ 7. $S.P. = ₹ 34.80$ 8. $C.P. = ₹ 360$ 9. $C.P. = ₹ 720$
10. $S.P. = ₹ 252$

Exercise 14.3

1. (i) ₹ 585 (ii) ₹ 5177.50
2. (i) ₹ 5 (ii) $5\frac{5}{9}\%$
3. 11% 4. $M.P = ₹ 10,000$ 5. 25% 6. 1:2 7. ₹ 2553 8. ₹ 600 9. ₹ 180
10. ₹ 180 11. ₹ 1150 12. $MP = ₹ 600$

Exercise 14.4

1. (i) Simple (ii) Compound (iii) Conversion (iv) Four (v) Principal
(vi) Half
2. (i) 3 conversion periods, 4% (ii) 8 conversion periods, 1%
3. ₹ 2828.80 4. ₹ 14292.19; ₹ 2292.19 5. ₹ 5868
6. (i) ₹ 1331 (ii) ₹ 400, ₹ 41 (iii) 3 years; ₹ 3121.60 (iv) ₹ 10000, 24% P.a
7. ₹ 2000 8. 2years 9. 10% per annum 10. ₹ 30000 11. ₹ 9261 12. 4.16% 13. 2 years
14. ₹ 62246.67

Rapid Assessment

1. (i) 2. (ii) 3. (ii) 4. (iv) 5. (ii)
6. (iii) 7. (i) 8. (iii) 9. (iv) 10. (ii)
11. (ii) 12. (ii) 13. (iv) 14. (i) 15. (iii)
1. Discount 2. 8 3. 243
4. Overhead 5. M.P 6. ₹ 1000
7. ₹ 627,000 8. 100% 9. ₹ 36 10. 300

- C. 1. T 2. F 3. T 4. T 5. T 6. F 7. T 8. F
 9. T 10. F 11. T
- D. 1. (i) 2. (iv) 3. (iii) 4. (i)
- E. 1. (iii) 2. (ii) 3. (i) 4. (i) 5. (vi)

Chapter 15

Exercise 15.1

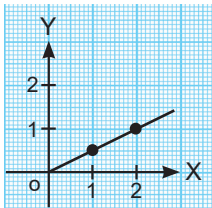
Do yourself

Exercise 15.2

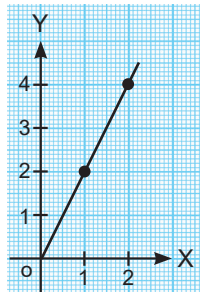
- (i) x -axis (ii) y -axis (iii) origin (iv) abscissa (v) ordinate (vi) x -axis (vii) y -axis (viii) (0, 0)
- (i) T (ii) F (iii) T (iv) F (v) T (vi) T (vii) F
- (i) Yes (ii) Yes (iii) Yes (iv) Yes (v) No
- (i) straight line (ii) parallelogram (iii) triangle (iv) rectangle (v) rhombus
- 0 (0, 0) A (3, 0) B (0, 3) P (4, 1) Q (9, 1) R (7, 3) S (5, 3)

Exercise 15.3

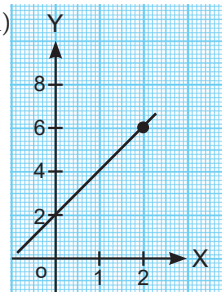
1. (i)



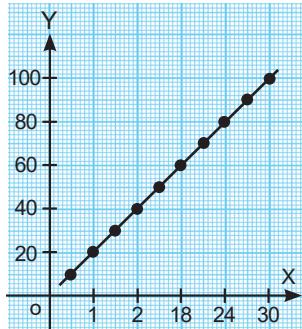
(ii)



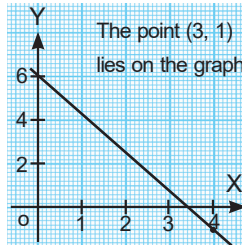
(iii)



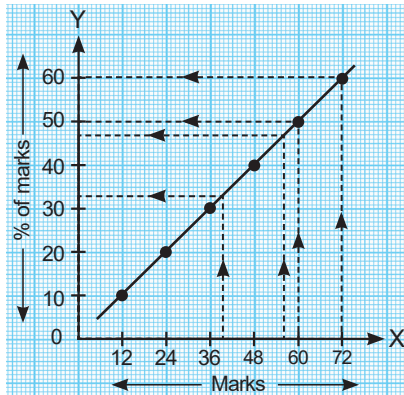
2.



3.



4.



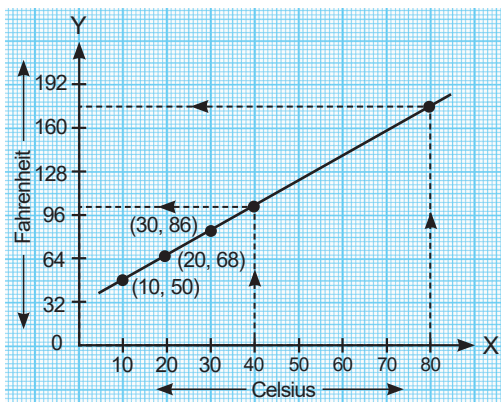
(i) 40 marks = 33%

(ii) 60 marks = 50%

(iii) 56 marks = 47%

(iv) 72 marks = 60%

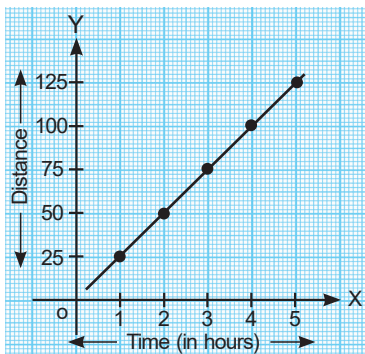
5.



(i) $C = 80$ at $F = 176$

(ii) $F = 104$ at $C = 40$

6.



7. (i) ₹ 375

(ii) ₹ 525

(iii) 3.3 Euros

(iv) 5.3 Euros

Rapid Assessment

- | | | | | | |
|----|-------------------------|-----------------|----------------|--------------|---------|
| A. | 1. (iii) | 2. (ii) | 3. (iv) | 4. (i) | 5. (ii) |
| B. | 1. T | 2. F | 3. F | 4. F | 5. T |
| | 6. T | 7. T | 8. T | | |
| C. | 1. line graph | 2. linear graph | 3. x and y | 4. y -axis | |
| | 5. x -axis, y -axis | 6. plotting | | | |
| D. | 1. (iii) | 2. (ii) | 3. (i) | 4. (ii) | 5. (iv) |