

## Answers

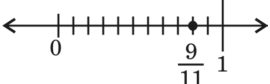
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### Chapter—1

1.  $\frac{160}{0}$

2. (i)  $\frac{7}{16}$       (ii)  $\frac{33}{100}$       (iii)  $\frac{-8}{15}$       (iv)  $\frac{70}{36}$  or  $\frac{35}{18}$

3. (i)  $\frac{7}{11}$       (ii)  $\frac{33}{25}$

4. (i)  $A = \frac{5}{7}$       (ii)  $B = -1\frac{2}{5}$  or  $-\frac{7}{5}$       (iii) 

5. (i) (b)  $\frac{9}{40}$

(ii)  $\frac{-27}{35}, \frac{-26}{35}, \frac{-25}{35}, \frac{-24}{35}, \frac{-23}{35}, \frac{-22}{35}, \frac{-21}{35}, \frac{-20}{35}, \frac{-19}{35}, \frac{-18}{35}$

(iii)  $\frac{1}{4}$

6.  $\frac{-51}{40}$

7. 90 metres

8.  $\frac{35}{20}$  or  $\frac{7}{4}$  or  $1\frac{3}{4}$

9.  $\frac{-19}{17}$  or  $-1\frac{2}{17}$

10.  $\frac{-8}{3}$

11.  $\frac{164}{40}$  or  $\frac{41}{10}$

12.  $x = \frac{268}{91}$

13.  $x = 24$

14. ₹ 66,000

15.  $\frac{1}{4}, \frac{5}{8}, \frac{13}{16}$

### Chapter—2

1.  $x = 37$                       2.  $x = 11$                       3. ₹ 4800                      4.  $40^\circ, 60^\circ, 80^\circ$   
5.  $x = \frac{38}{3}$                       6. 64 yrs                      7. 20                      8. 15 cm, 4 cm  
9. 54                      10. 1                      11. 40, 41, 42, 43                      12.  $y = 10$  cm

### Chapter—3

1.  $1260^\circ$                       2.  $360^\circ$                       3.  $36^\circ$                       4.  $x = 10$   
5. 27 m, 9 m                      6.  $x = 2$   
7. (i) ABCD is not a parallelogram In a Parallelogram opposite sides are equal here  $AD \neq BC$   
(ii) ABCD is not a perallelogram. In a parallelogram oppsite angles are equal.  
here  $\angle A = 80^\circ, \angle C = 55^\circ, \angle A \neq \angle C$   
8.  $x = 70^\circ$                       9.  $AC = 26$  cm                      10.  $6\sqrt{2}$  cm

### Chapter—4

1. 2                      2. 5cm  
8. (i) False  
(ii) True  
(iii) False  
(iv) False  
(v) True

### Chapter—5

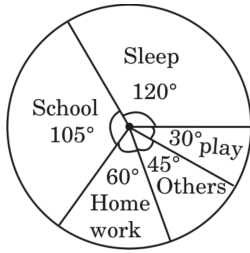
1. Frequency.                      2. 200                      3. 10                      4. Continuous grouped data  
5. 0                      6. HH, HT, TH, TT  
7.  $\frac{1}{2}$                       8.  $\frac{1}{2}$                       9. 0                      10.  $\frac{2}{5}$

11.

Outcome	Frequency
1	5
2	4
3	3
4	3
5	2
6	3

12. (a) 60 — 65  
(b) 13  
13. 20

14.



15.

ClassInteval (Marks)	Frequency (Number of students)
0 — 5	2
5 — 10	6
10 — 15	5
15 — 20	9
20 — 25	3
25 — 30	5

**Chapter—6**

1. (i) 1                      (ii)  $30^2$  or 900      (iii)  $20^2$  or 400                      (iv) 301  
       (v)  $5^2$  or 25          (vi)  $x = 4$
2. 121, 144
3.  $144 + 145$
4. (10, 24, 26)
5. 3
6. (i) 103                      (ii) 5.8                      (iii) 0.67                      (iv)  $\frac{17}{19}$                       (v)  $1\frac{1}{3}$
7. (i) 110                      (ii) 0.15
8. 1024
9. 144
10.  $x = 12$
11. 520 m
12. 32
13.  $336 \text{ m}^2$
14. 25
15. (i) True  
       (ii) False  
       (iii) False  
       (iv) False

### Chapter—7

1. 3375
2. No
3.  $x = 9$
4. 3
5. 4913
6. 90
7. (i) 9                      (ii) 12                      (iii) 14                      (iv) 40                      (v) 1.1
8. 70
9. 2
10.  $x = 0.2$
11. 21 m
12.  $a = 11$
13.  $\frac{11}{12}$
14.  $\frac{x}{y} = \frac{8}{27}$
15. 2, 4, 6

### Chapter—8

1. (i) 36%                      (ii) 240%
2.  $\frac{3}{20}$
3. (i)  $\frac{1}{40}$ , 1 : 40              (ii)  $\frac{1}{400}$ , 1 : 400              (iii)  $\frac{5}{4}$ , 5 : 4
4. 300
5.  $y = 9600, z = 40000$
6. Decrease % = 1%
7. 12.5%
8. 20
9. (i) (D) 180              (ii) (C) 600              (iii) (D) 2.5%              (iv) (A)  $18\frac{3}{4}\%$               (v) (C) ₹ 750
10. (i) False              (ii) False              (iii) True              (iv) False
11. (i) ₹ 90              (ii) 8              (iii) 120              (iv) 180              (v) 150
12. 28%

13. ₹ 1000  
 14. 25%  
 15. ₹ 40.5

### Chapter—9

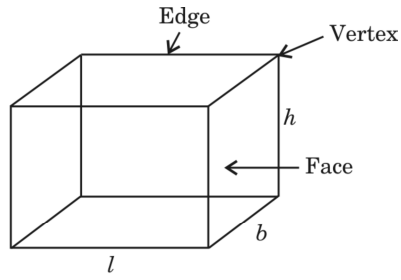
1. Trinomial (ii) Monomial (iii) Monomial  
 2.  $9x^2 - 3x + 13$   
 3.  $\frac{-1}{3}y^3 + y^2 + y + 3$

First Monomial → Second Monomial ↓	11x	-10qp	$4a^2b^2$	$2x^2y^2$	$-3mn^2$
5x	$55x^2$	$-50pqx$	$20a^2b^2x$	$10x^3y^2$	$-15mn^2x$
7pq	$77pqx$	$-70p^2q^2$	$28a^2b^2pq$	$14pqx^2y^2$	$-21mn^2pq$
$6a^2b^2$	$66a^2b^2x$	$-60a^2b^2pq$	$24a^4b^4$	$12a^2b^2x^2y^2$	$-18a^2b^2mn^2$
$-9x^2y^2$	$-99x^3y^2$	$-90x^2y^2pq$	$-36a^2b^2x^2y^2$	$-18x^4y^4$	$27mn^2x^2y^2$
$8m^2n$	$88m^2nx$	$-80pqm^2n$	$32a^2b^2m^2n$	$-16m^2nx^2y^2$	$-24m^3n^3$

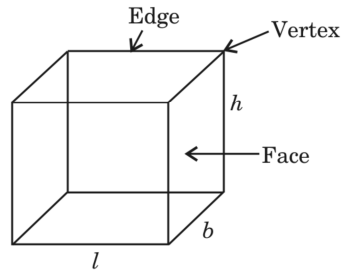
5. (i) 7 (ii) -23 (iii) 143 (iv) 100 (v)  $A^8 - B^8$   
 6. (i) False (ii) False (iii) True  
 7. 250  
 8. 45  
 9. (i)  $x + y = 12 ; x - y = 2$   
 (ii)  $x^2 + \frac{1}{x^2} = 14 ; x^4 + \frac{1}{x^4} = 194$   
 10. (i) (C) 5 (ii) (A)  $2m^2 - 5m + 6$   
 (iii) (C)  $49a^2 - 112ab + 64b^2$   
 (iv) (C) -6  
 (v) (B)  $-7z^3 + 16z^2 + 7z + 37$   
 11. (i)  $24x - 8y + 25z$  (ii)  $-14x + 30y - 55z$   
 (iii)  $10x + 4y - 17z$  (iv)  $18y - 13z$   
 12.  $(3a + b + c)$  units  
 13. (i) 8649 (ii) 100 (iii) 10137  
 14. (i)  $4x^2y^2$  (ii)  $50x^2 + 242$   
 15. Volume  $lbh$   
 (i)  $240x^2y^2z^2$  (ii)  $x^9$  (iii)  $108l^2m^2n^2$

**Chapter—10**

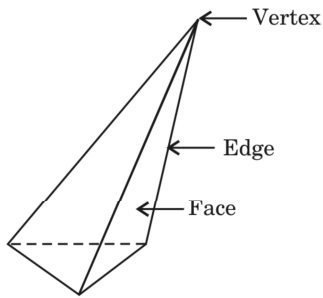
1. (i)



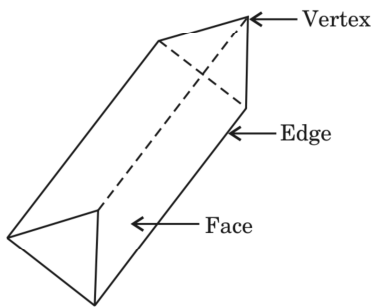
(ii)



(iii)



(iv)



2. 4, Tetrahedron

3. (i) 8, 12, 6      (ii) Vertex  
 (iii) Prism      (iv) Tetrahedron  
 (v) Cube

4.	Name of solid	No. of Faces (F)	No. of Verties (V)	No. of Edges (E)
	Cuboid	6	8	12
	Triangular prism	5	6	9
	Triangular Pyramid	4 triangular faces	4	6
	Square pyramid	5 $\left\{ \begin{array}{l} 1 \text{ square face} \\ 4 \text{ triangular faces} \end{array} \right.$	5	8
	Rectangular pyramid	5 $\left\{ \begin{array}{l} 1 \text{ rectangular face} \\ 4 \text{ Triangular faces} \end{array} \right.$	5	8

5. Sphere, Cone, Cylinder

6.  $V_1 = 8$

$V_2 = 5$

$E_1 = 8$

7. (iv) and (v)

8. (i) Square pyramid

(ii) Triangular prism

(iii) Triangular prism

9. Figure (i) Represent a dice

10. (i)  $\leftrightarrow$  (d)      (ii)  $\leftrightarrow$  (a)      (iii)  $\leftrightarrow$  (b)      (iv)  $\leftrightarrow$  (c)

11. (i) (A) Cuboid      (ii) (D) 4      (iii) (B) Triangular Prism

(iv) (B) Cuboid      (v) (A) 6

12. No, because  $F + V \neq E + 2$

### Chapter—11

1. (a) False.      (b) True      (c) True      (d) False      (e) True.

2.  $154 \text{ cm}^2$

3. (a)  $42 \text{ cm}^2$       (b)  $171 \text{ cm}^2$       (c)  $69 \text{ cm}^2$       (d)  $84 \text{ cm}^2$

4.  $20 \text{ cm}$

5. ₹ 5500

6.  $38400 \text{ cm}^2$

7. (a)  $1 : 27$       (b)  $1 : 9$

8.  $840 \text{ m}$ .

9. (a)  $5324 \text{ cm}^3$       (b)  $1232 \text{ cm}^3$

(c)  $38808 \text{ cm}^3$       (d)  $\frac{12100}{7} \text{ cm}^2 \left( \text{or } 1728\frac{4}{7} \right) \text{ cm}^2$

(e)  $704 \text{ cm}^2$       (f)  $5544 \text{ cm}^2$

10.  $176 \text{ cm}^2$ .

11. 56 cm.
12. 3 : 5.
13. 21 m.
14. 90 cm.
15. 176 m. or 17600 cm.

### **Chapter—12**

1. (a) 81                      (b) 26  
(c)  $2^5$  or 32              (d)  $11^2$  or 121  
(e)  $= 7^4$
2.  $1 \times 10^3 + 7 \times 10^2 + 2 \times 10^1 + 3 \times 1 + 5 \times 10^{-1} + 6 \times 10^{-2}$
3.  $2^7$
4. (a)  $\frac{1}{3}$                       (b) 9  
(c) 1                          (d) 65
5. 3
6. (a) False                  (b) False                  (c) True                  (d) True
7. 1
8.  $x = 5$
9.  $3^6$  or 729
10. 4
11. -200
12.  $x = 1$
13.  $3.84467 \times 10^8$
14. 42167800
15. 0.8 cm.

### **Chapter—13**

1. (a) Direct                  (b) Inverse                  (c) Direct                  (d) Direct                  (e) Inverse.
2.  $x = 4, y = 6$
3. (a) 225 km.                  (b) 30 km.
4. 30 days.
5. 4 more gardeners
6.  $x = 34$
7.  $a = 5, b = \frac{75}{4}, c = 7.5$

8.  $A : C = 8 : 15$
9. (a)  $C_1$  – one child,  $C_2$  – two children,  $C_3$  – 4 children,  $C_4$  – 5 children  
 (b) If a person have more children, each will get less piece of land.
10. 42 days

### Chapter—14

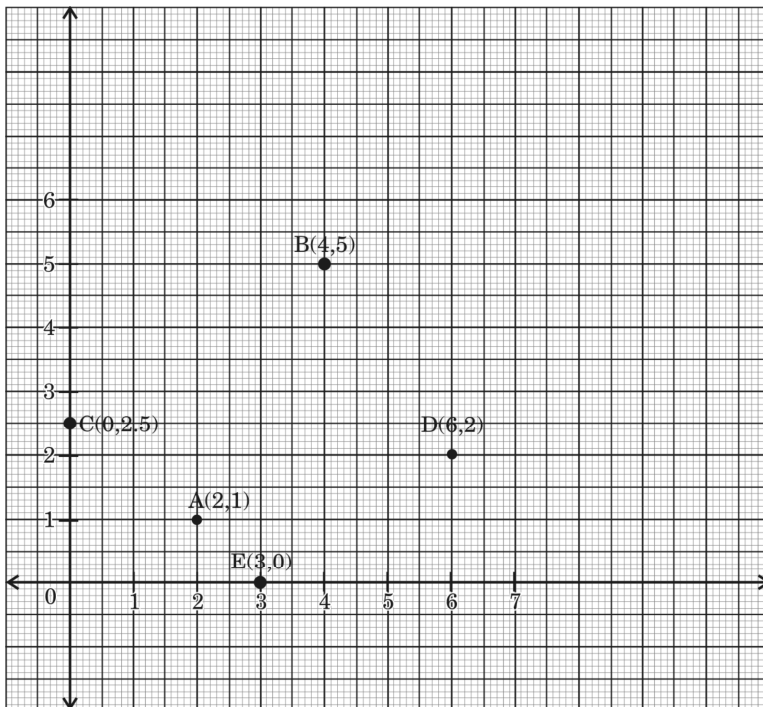
1. (i)  $8x^2 = 1, 2, 4, 8, x, 2x, 4x, 8x, x^2, 2x^2, 4x^2, 8x^2$   
 (ii)  $17xy^2 = 1, 17, x, 17x, y, 17y, xy, y^2, 17y^2, xy^2, 17xy^2, 17xy$   
 (iii)  $33y^2z = 1, 3, 11, 33, y, 3y, 11y, 33y, y^2, 3y^2, 11y^2, 33y^2, z, 3z, 11z, 33z, yz, 3yz, 11yz, 33yz, y^2z, 3y^2z, 11y^2z, 33y^2z$   
 (iv)  $15pq = 1, 3, 5, 15, p, 3p, 5p, 15p, q, 3q, 5q, 15q, pq, 3pq, 5pq, 15pq$   
 (v)  $-6ab = \pm 1, \pm 2, \pm 3, \pm 6, \pm a, \pm 2a, \pm 3a, \pm 6a, \pm b, \pm 2b, \pm 3b, \pm 6b, \pm ab, \pm 2ab, \pm 3ab, \pm 6ab$ .
2. Common factors are  
 (i)  $1, 7, x, 7x$   
 (ii)  $1, 4, p, 4p$   
 (iii)  $-1, -5, -a, -5a, -a^2, -5a^2$   
 (iv)  $1, 2, a, 2a, a^2, 2a^2, b, 2b, b^2, 2b^2, ab, 2ab, a^2b, 2a^2b, ab^2, 2ab^2, a^2b^2, 2a^2b^2$
3. (i)  $HCF = 5a$       (ii)  $HCF = 2xy$       (iii)  $HCF = P$   
 (iv)  $HCF = -3ab$
4. (i)  $4x(1-3x)$   
 (ii)  $(x-2y)(6x+5y)$   
 (iii)  $(x+2y)(x+2y-4)$   
 (iv)  $(3x+2)(5y-2)$   
 (v)  $(a+b)(x^2+y^2)$   
 (vi)  $(a-1)(b-1)$
5. (i)  $(3a-5b)(3a+5b)$   
 (ii)  $3(4p-3q)(4p+3q)$   
 (iii)  $(6x+5y)^2$   
 (iv)  $(2a-b-3c)(2a-b+3c)$   
 (v)  $(x-2y-3z)(x-2y+3z)$   
 (vi)  $xy(x-y)(x+y)(x^2+y^2)$
6. (i)  $(x+5)(x+9)$       (ii)  $(x-10)(x-12)$   
 (iii)  $(y+9)(y-5)$       (iv)  $(a-8)(a+11)$   
 (v)  $(x-7)(x+3)$

7. (i)  $3ab$   
 (ii)  $-9ab^2$   
 (iii)  $(-a^2 + 3a - 4)$  or  $-(a^2 - 3a + 4)$   
 (iv)  $(x - 2)$   
 (v)  $(x - y)$   
 (vi)  $(y + 2)$

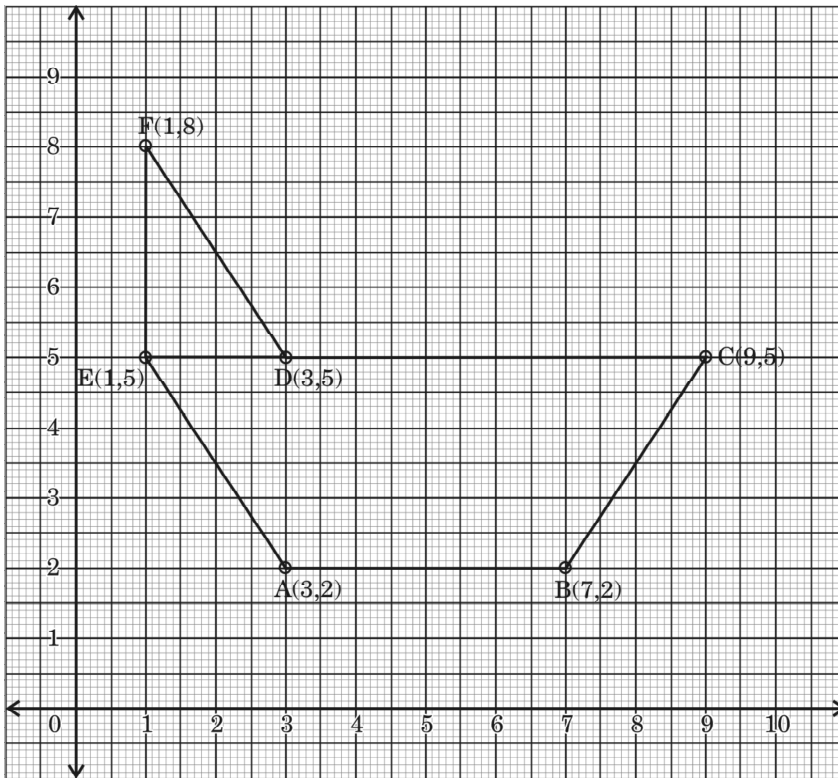
8. (i) False  $\because \frac{2x-5}{2x} = \frac{2x}{2x} - \frac{5}{2x} = 1 - \frac{5}{2x} \neq -5$   
 (ii) False  $\because 3(y-2) = 3y - 3 \times 2 = 3y - 6 \neq 3y - 2$   
 (iii) False  $\because 4x$  and  $3y$  are not like terms so we can not add them  
 (iv) False  $\because (3x)^2 = 3^2 \times x^2 = 9x^2$   
 (v) True  $\because a(5a + 2) = 5a \times a + 2 \times a = 5a^2 + 2a = \text{R.H.S.}$

### Chapter—15

1. (i) Origin (ii) Rene Descartes  
 (iii) 3 (iv) 3 units  
 (v) 1 (vi) 5units.
2. A (3, 2), B (4, 0), C (2, 6), D (7, 4), E (0, 5)
- 3.

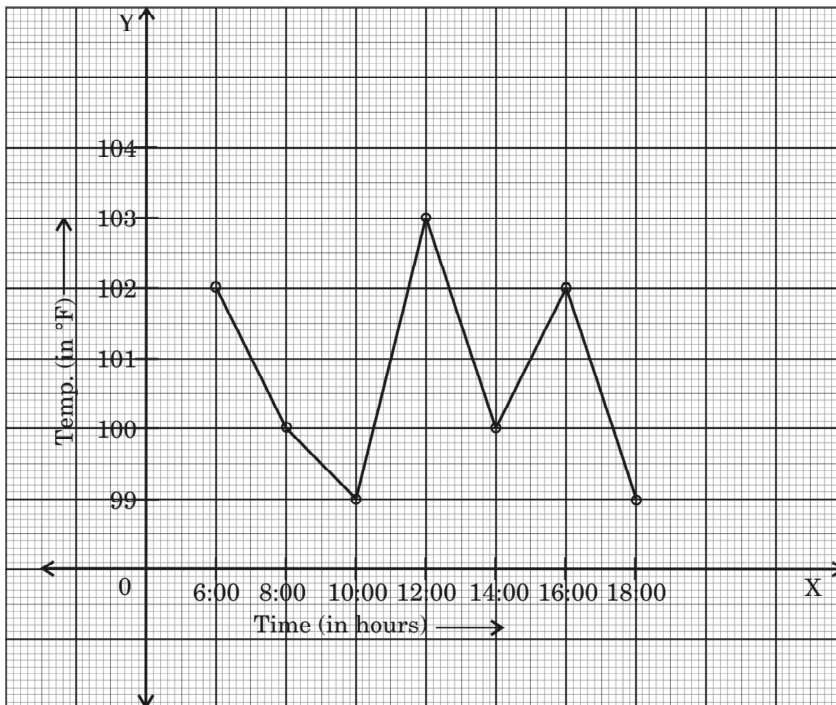


4.

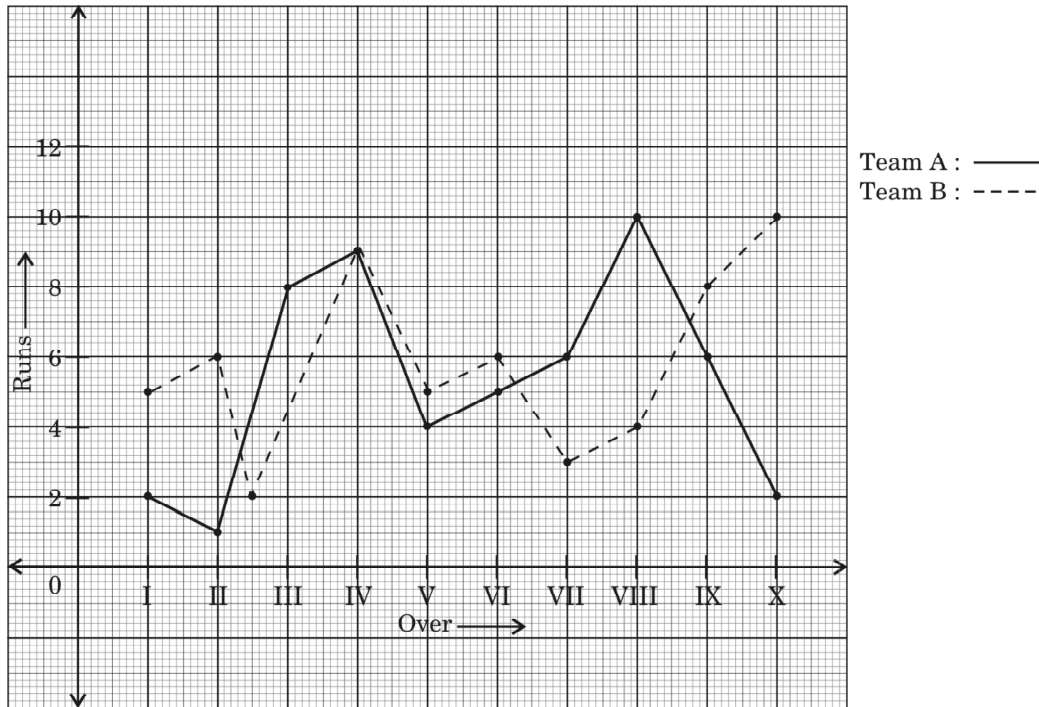


Trapezium ABCE and Right angled triangle DEF together forming a boat.

5.

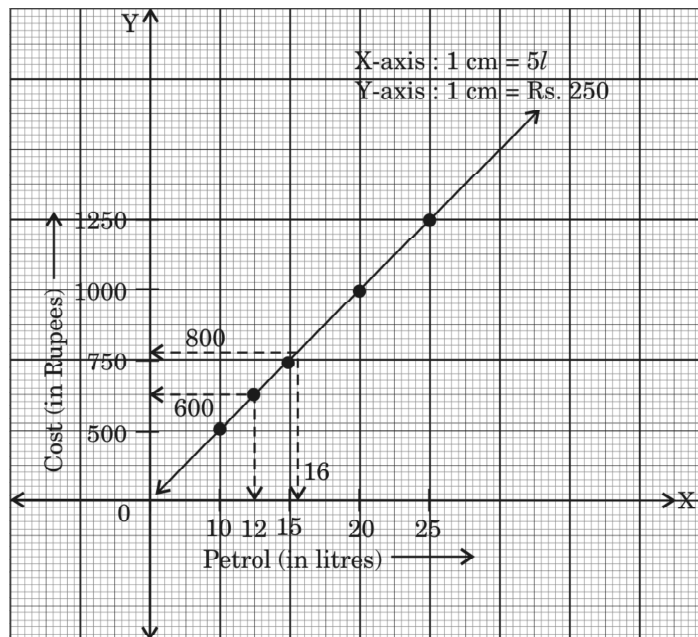


6.



7. (i) (a) Plant A = 8 cm Plant B = 7 cm  
 (b) Plant A = 19 cm Plant B = 20 cm  
 (ii) Difference in height =  $20 - 19 = 1$  cm  
 (iii) Plant A grew most during 5<sup>th</sup> week.  
 (iv) Plant B grew least during 2<sup>nd</sup> week.

8. (i) Rs. 800  
 (ii) 16 l



## **Chapter—16**

1.  $a = 1, 4, 7$
2.  $y = 4$
3.  $x = 1, 3, 5, 7, 9$
4.  $x = 7$
5. (i)  $A = 6, B = 1$       (ii)  $A = 2, B = 5$   
(iii)  $A = 8, B = 1$       (iv)  $A = 5, B = 2$   
(v)  $A = 5, B = 2$       (vi)  $A = 1, B = 6$
6. (i) False  
(ii) True  
(iii) True  
(iv) True  
(v) False
7. (i)  $a \times 10 + b \times 1$  or  $(10a + 6)$   
(ii) 996  
(iii) 8  
(iv) 6  
(v) 1001