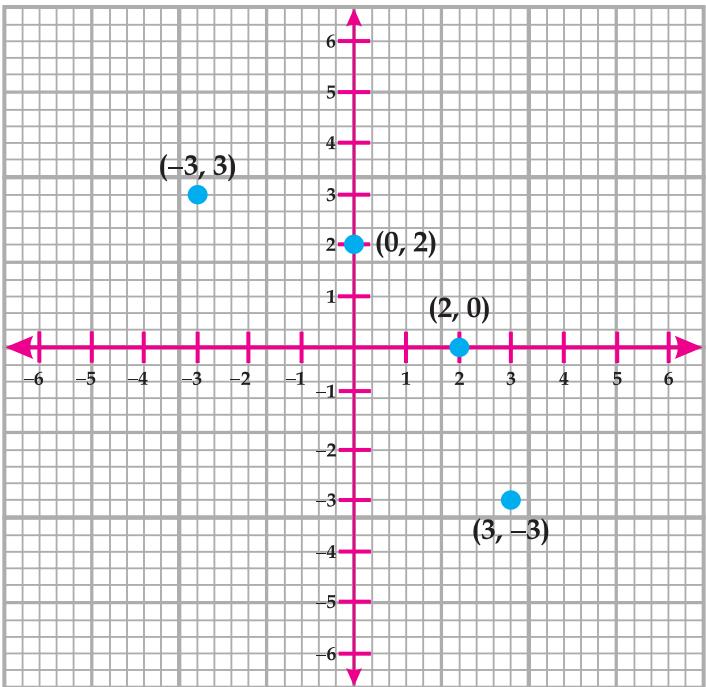
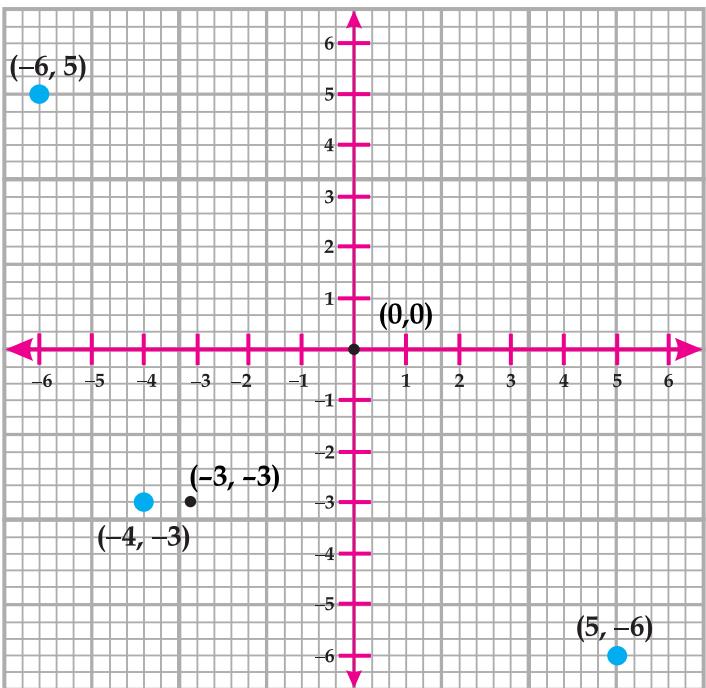


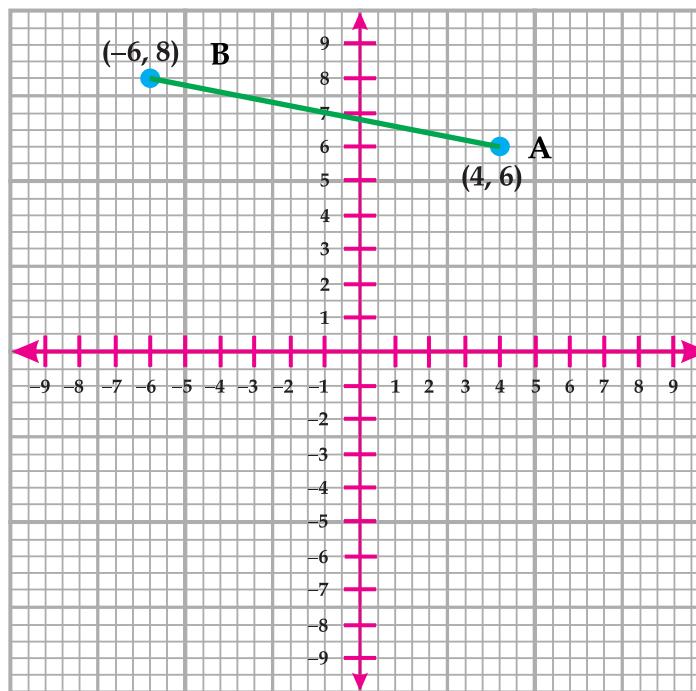
ii.



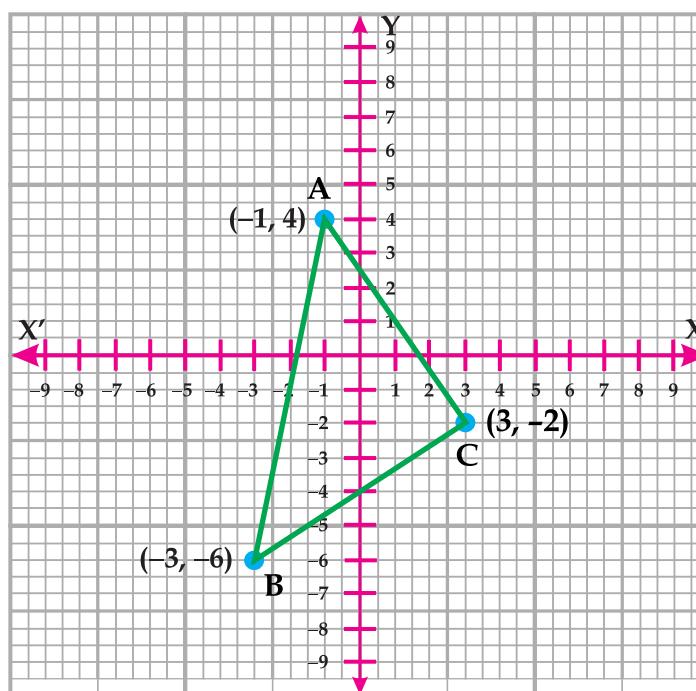
iii.

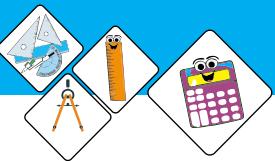


4.

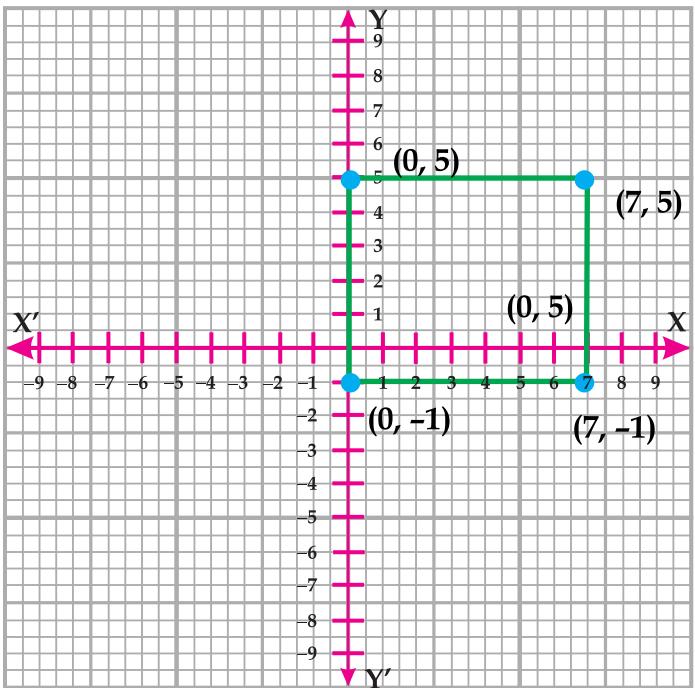


5.

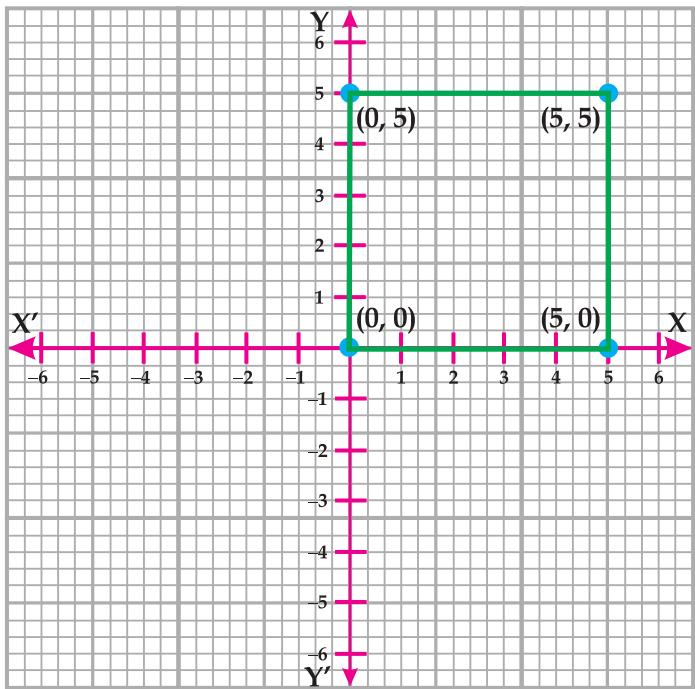




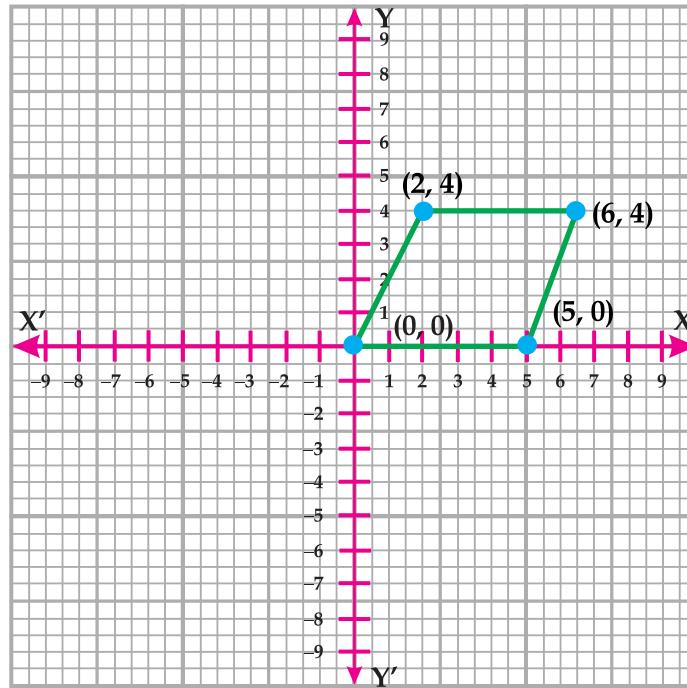
6.



7.



8.



9. i. $y = 2 - x$

x	-3	-2	-1	0	1	2	3
y	5	4	3	2	1	0	-1

ii. $y = 2x - 6$

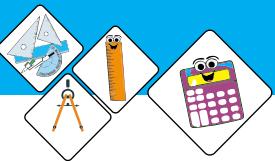
x	-3	-2	-1	0	1	2	3
y	-12	-10	-8	-6	-4	-2	0

iii. $x = 12 - 2y$

y	-3	-2	-1	0	1	2	3
x	18	16	14	12	10	8	6

iv. $x = 2y - 3$

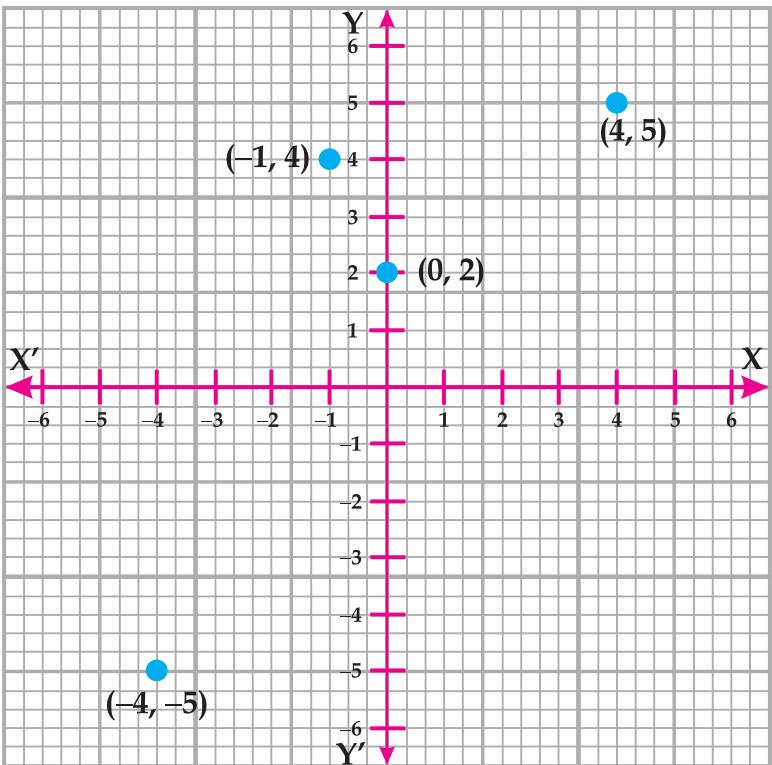
y	-3	-2	-1	0	1	2	3
x	-9	-7	-5	-3	-1	1	3



Exercise 7.2

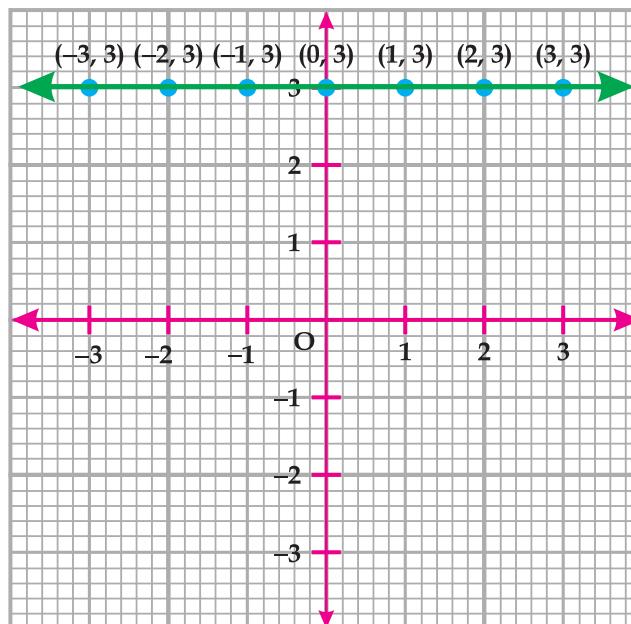
1. $y = 6 - x$

y	-3	-2	-1	0	1	2	3
x	9	8	7	6	5	4	3



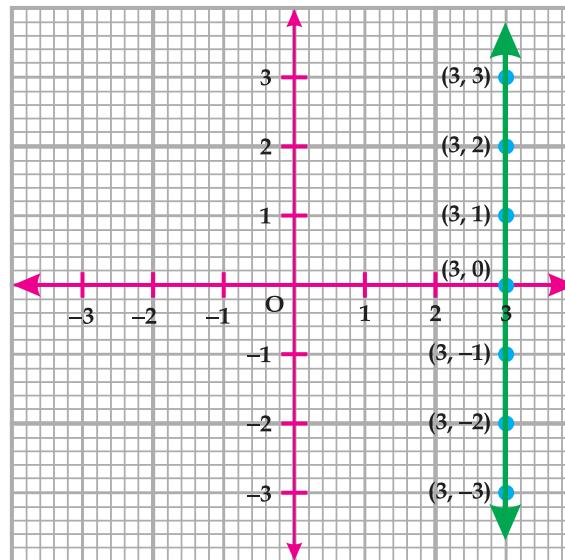
3. i.

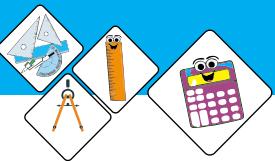
x	-3	-2	-1	0	1	2	3
y	3	3	3	3	3	3	3



ii.

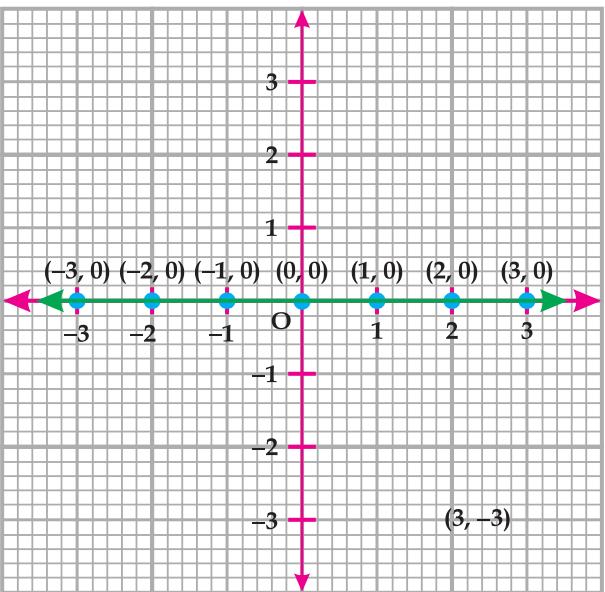
x	3	3	3	3	3	3	3
y	-3	-2	-1	0	1	2	3





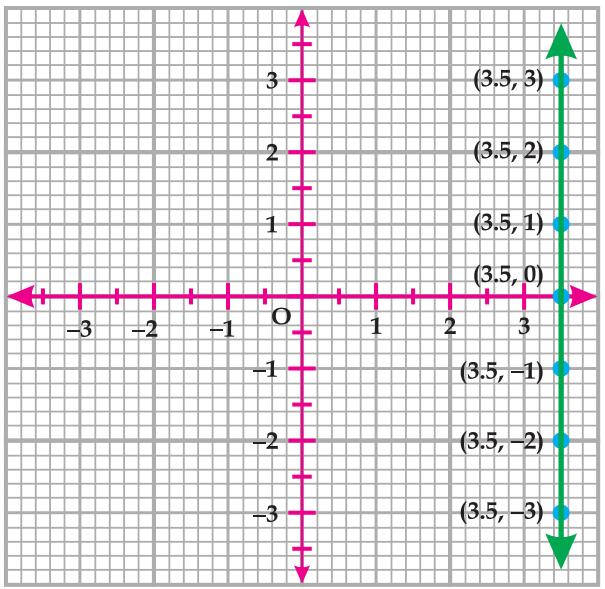
iii.

x	-3	-2	-1	0	1	2	3
y	0	0	0	0	0	0	0



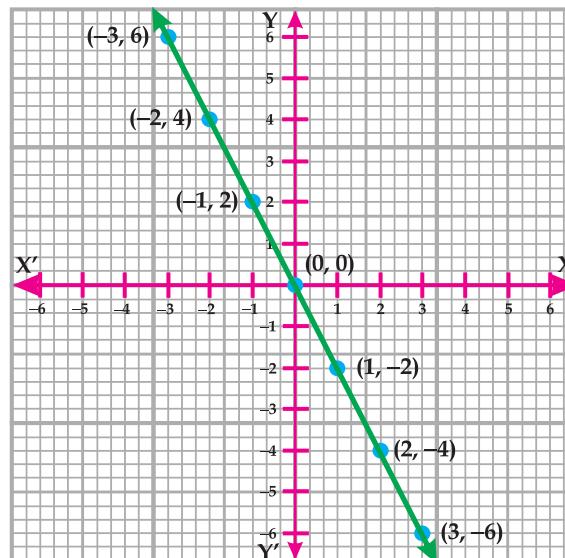
v.

x	3.5	3.5	3.5	3.5	3.5	3.5	3.5
y	-3	-2	-1	0	1	2	3



vi.

x	-3	-2	-1	0	1	2	3
y	6	4	2	0	-2	-4	-6



4. i.

Equation	x -Coordinate	y -Coordinate
$y = \frac{1}{2}x$	0	0
	4	2

ii.

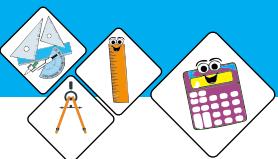
Equation	x -Coordinate	y -Coordinate
$x = \frac{2}{3}y$	1	$\frac{3}{2}$
	1	$\frac{3}{2}$

iii.

Equation	x -Coordinate	y -Coordinate
$2x + 4y = 8$	0	2
	$\frac{7}{2}$	$\frac{1}{4}$

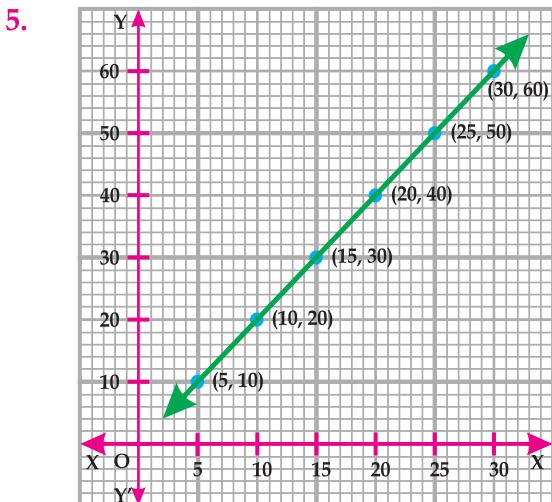
iv.

Equation	x -Coordinate	y -Coordinate
$2x + y = 6$	1	4
	3	0



v.	Equation	x -Coordinate	y -Coordinate
	$x - y = 2$	2	0
		1	-1

vi.	Equation	x -Coordinate	y -Coordinate
	$x - 3y = 6$	3	-1
		3	-1



6. a. The time taken by Ayesha to ride 100 km is 5 hours.
b. The total distance covered by Ayesha in 3 hours is 60 km.

Exercise 7.3

1. i. 1.6 km ii. 4.8 km iii. 1.2 miles iv. 4.9 miles or 5 miles
 2. i. 5 acres ii. 12 acres iii. 2 hectares iv. 6 hectares
 3. i. 35.6°F ii. 35.4°F iii. 0°C iv. 2.4°C
 4. i. 90° ii. 156 Rs iii. 5 riyal iv. 2.6 riyal
 5. i. $\{3, -2\}$ ii. $\{3, 1\}$ iii. $\{3, 1\}$ iv. $\{4, 7\}$ v. $\{1, 1\}$
 vi. $\{-3, -4\}$ vii. $\{-3, 2\}$ viii. $\{1, 1\}$ ix. $\{8, 4\}$ x. $\{5, 1\}$

Review Exercise 7

1. i. True ii. False iii. False iv. False
 3. i. c ii. b iii. a iv. b v. c vi. d vii. a



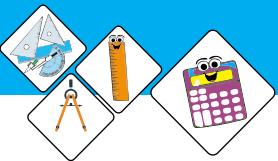

Exercise 8.1


1. i. $\{-2, -3\}$ ii. $\left\{ \frac{1}{2}, -\frac{1}{3} \right\}$ iii. $\{6, 5\}$ iv. $\{2, 0\}$
 v. $\{5, -3\}$ vi. $\left\{ \frac{8}{3}, \frac{3}{4} \right\}$ vii. $\{8, 2\}$ viii. $\left\{ 0, -\frac{8}{3} \right\}$
2. i. $\{-3+2\sqrt{2}, -3-2\sqrt{2}\}$ ii. $\left\{ 0, -\frac{10}{3} \right\}$ iii. $\left\{ \frac{4+\sqrt{13}}{3}, \frac{4-\sqrt{13}}{3} \right\}$
 iv. $\left\{ \frac{3}{4}, -\frac{7}{6} \right\}$ v. $\left\{ 4, -\frac{3}{2} \right\}$ vi. $\left\{ \frac{-2+\sqrt{6}}{2}, \frac{-2-\sqrt{6}}{2} \right\}$
3. i. $b = -2$ ii. $\frac{-4}{3}$




Exercise 8.2


1. i. $\{5, -3\}$ ii. $\left\{ \frac{3}{5}, -\frac{5}{2} \right\}$
 iii. $\left\{ \frac{-1+\sqrt{5}}{2}, \frac{-1-\sqrt{5}}{2} \right\}$ iv. $\left\{ \frac{-1+2\sqrt{7}}{3}, \frac{-1-2\sqrt{7}}{3} \right\}$
 v. $\left\{ \frac{2+3i\sqrt{5}}{3}, \frac{2-3i\sqrt{5}}{3} \right\}$ vi. $\left\{ \frac{-3+\sqrt{41}}{4}, \frac{-3-\sqrt{41}}{4} \right\}$
 vii. $\left\{ \frac{1+i\sqrt{5}}{3}, \frac{1-i\sqrt{5}}{3} \right\}$ viii. $\left\{ \frac{1}{2}, \frac{-1}{3} \right\}$
 ix. $\left\{ \frac{5}{2}, 0 \right\}$ x. $\{1, -1\}$
 xi. $\{3\}$ xii. $\{\sqrt{14}, -\sqrt{14}\}$



Exercise 8.3



1. $\{\pm 3, \pm i\}$

2. $\{\pm 2, \pm i\}$

3. $\left\{ \pm \frac{1}{2}, \pm \frac{\sqrt{6}}{3} \right\}$

4. $\left\{ -\frac{3}{4}, -2 \right\}$

5. $\left\{ \pm \frac{\sqrt{6}}{2}i, \pm \frac{2\sqrt{14}}{7}i \right\}$

6. $\{-1, 2\}$

7. $\{2\}$

8. $\{-2, 1\}$

9. $\{-1\}$

10. $\{-2\}$

11. $\{2, 4\}$

12. $\left\{ 3, -10, \frac{-7 \pm \sqrt{79}}{2}i \right\}$

13. $\left\{ -6, 1, \frac{-5 \pm \sqrt{39}}{2}i \right\}$

14. $\left\{ 0, 1, \frac{1 \pm \sqrt{57}}{2} \right\}$

Exercise 8.4



1. $\{4\}$

2. $\{6\}$

3. $\{1, 3\}$

4. $\{2\}$

5. $\left\{ 0, -\frac{3}{2} \right\}$

6. $\{0, 3\}$

Review Exercise

1. i. 2

ii. $ax^2 + bx + c = 0, a \neq 0$

iii. Exponential

iv. $x=2$

v. $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

2. i. b

ii. a

iii. c

iv. a

v. a

vi. c

vii. b

viii. a

ix. c

x. a

3. i. False

ii. False

iii. False

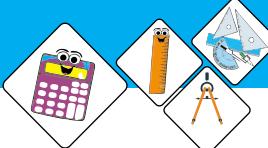
iv. False

v. False

vi. True

vii. True





Exercise 9.1

3. $x = 17, y = 5$ 4. $x = 5, y = 3$

Review Exercise 9

1. 30°
2. i. True ii. False iii. True iv. False v. False
3. i. \overline{DF} ii. $\angle RPQ$ iii. Congruent
iv. Equilateral v. Hypotenuse vi. 90°
4. i. b ii. c iii. b iv. c

Exercise 10.3

1. 8 cm

Exercise 10.4

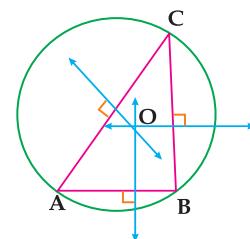
3. 1 cm

Review Exercise 10

1. i. Congruent ii. Congruent iii. Concurrent iv. Bisect
v. Equal vi. 360°
2. i. d ii. b iii. d iv. c v. b
vi. b vii. a viii. a

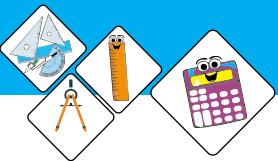
Exercise 11.1

3. The centre of the circle passing through the three non-collinear points is on the point of intersection of right bisector of the line segment obtained by joining these non-collinear points. This point of intersection is equidistant from all three non-collinear points.

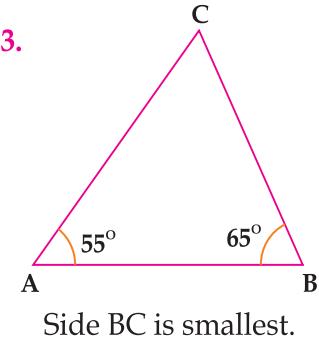
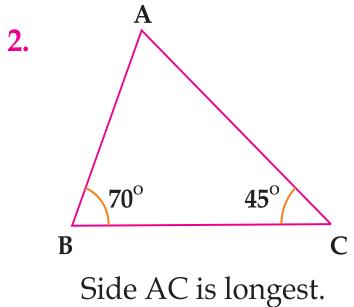


Review Exercise 11

3. i. True ii. True iii. True
4. i. c ii. a iii. b iv. a



Exercise 12.1



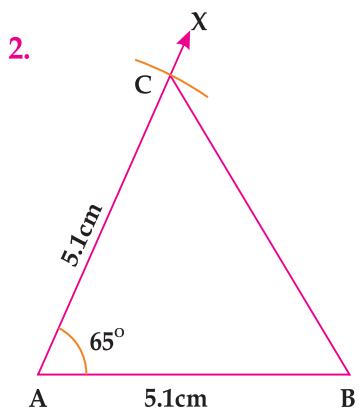
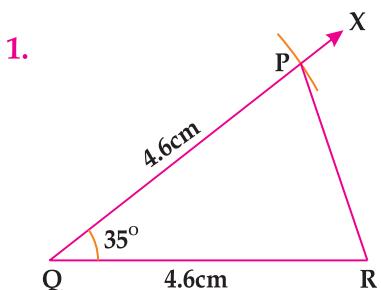
Review Exercise 12

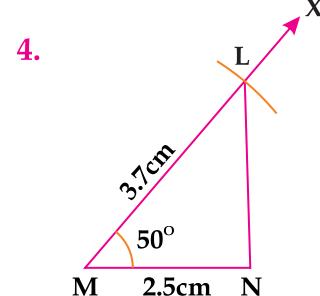
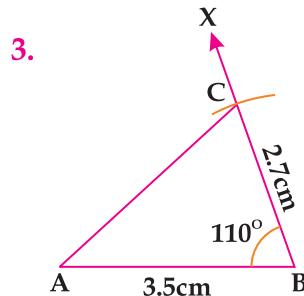
1. i. True ii. False iii. False iv. False v. True

2. i. Hypotenuse ii. Greater iii. $m\overline{AB}$ is smallest

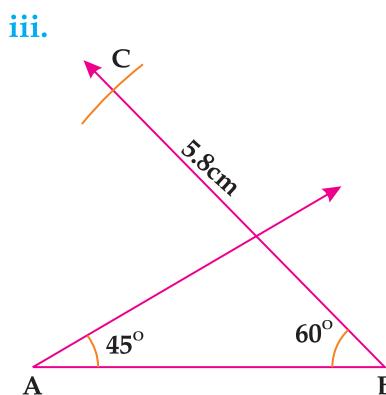
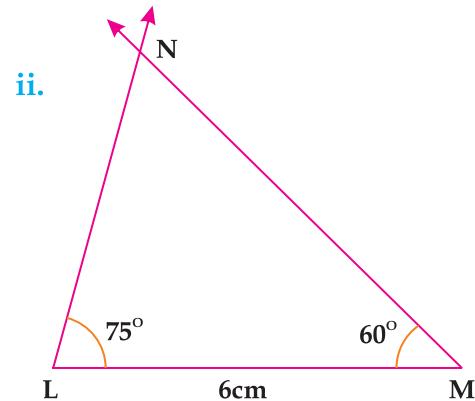
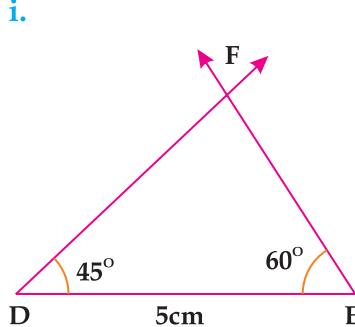
3. i. a ii. c

Exercise 13.1



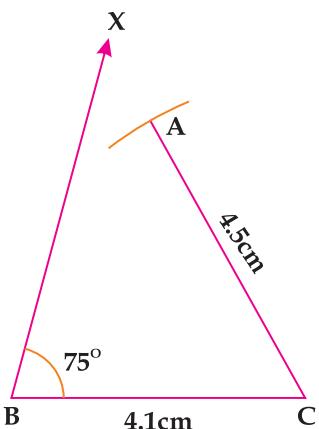


6.

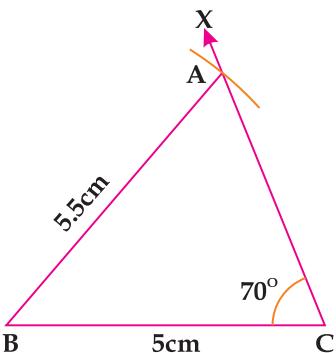


7.

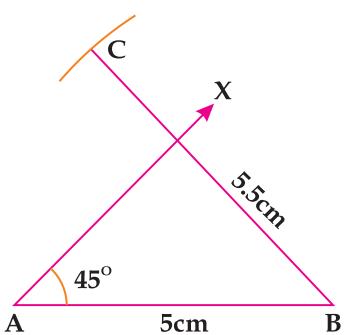
i.



ii.

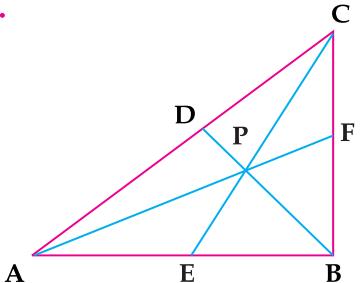


iii.

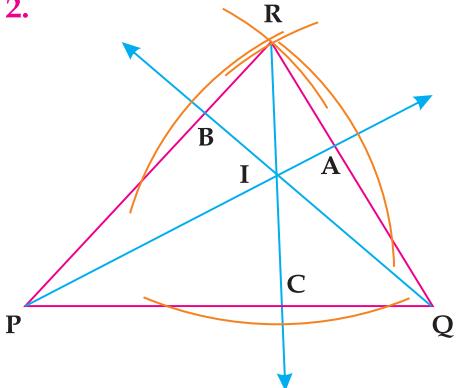


Exercise 13.2

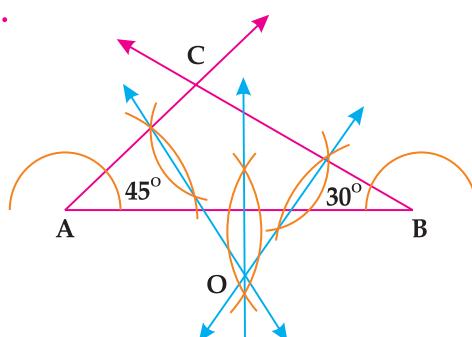
1.



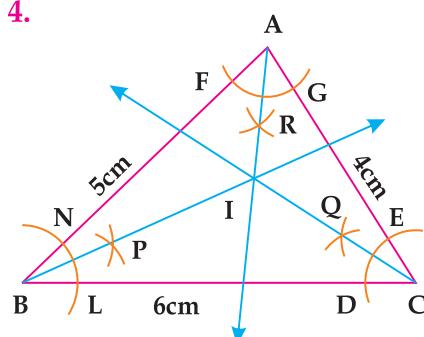
2.



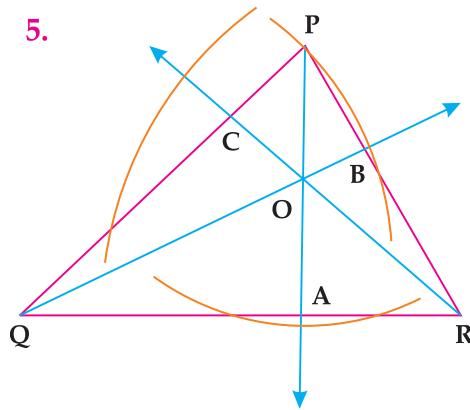
3.



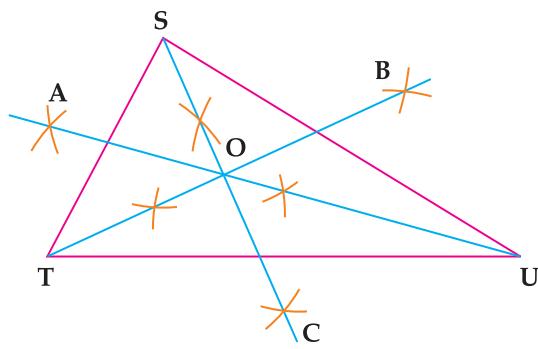
4.



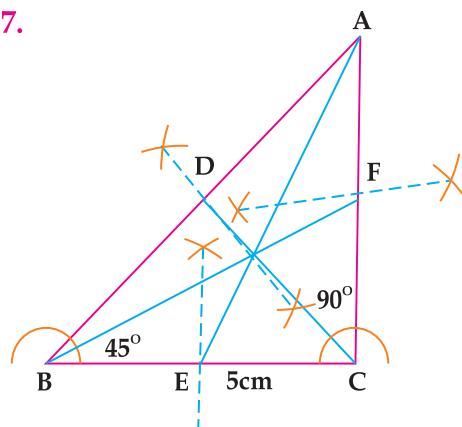
5.



6.

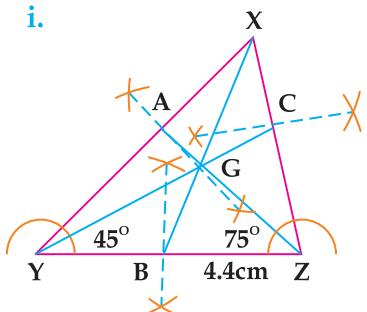


7.

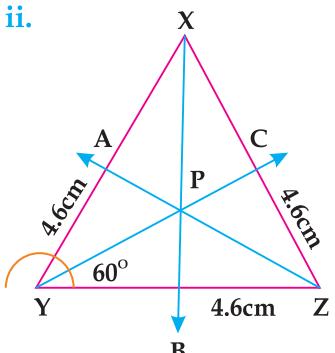


8.

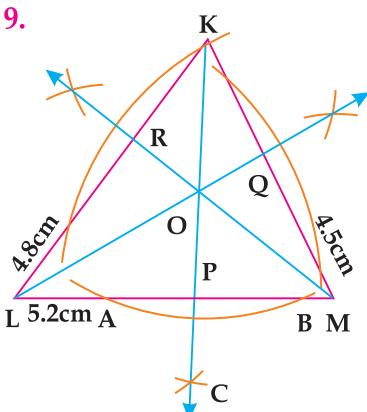
i.



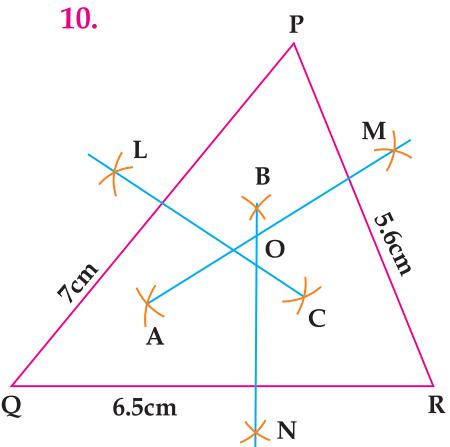
ii.



9.

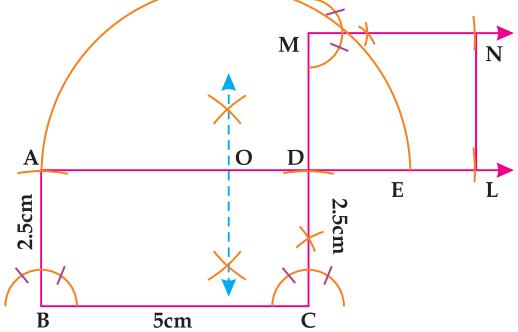


10.

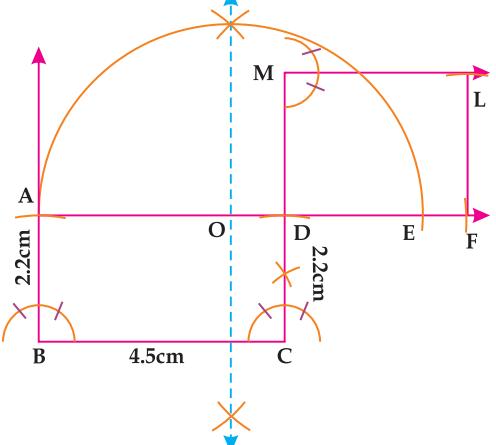


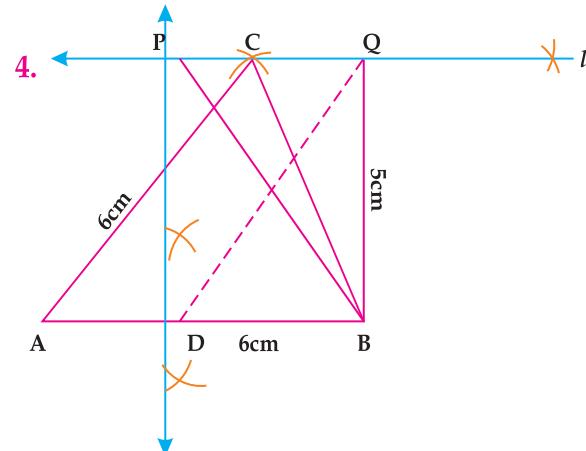
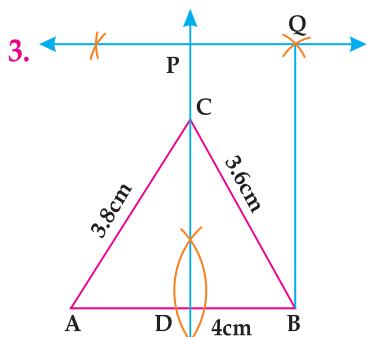
Exercise 13.3

1.



2.





Review Exercise 13

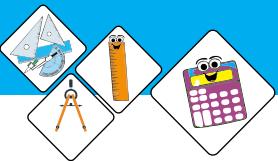
1. i. Hypotenuse ii. Altitude of a triangle iii. Median
 iv. Concurrent v. Equal
2. i. c ii. d iii. c iv. b v. a
 vi. d vii. c viii. b ix. d

Exercise 14.1

3. $\triangle BCD = 21\sqrt{2} \text{ cm}^2$

Review Exercise 14

1. i. True ii. True iii. False iv. True v. False
 vi. False vii. False viii. True
2. i. b ii. b iii. c iv. d v. d vi. b



Exercise 15.1

1. i. Side $m\overline{AB} = 3\sqrt{7}\text{ cm}$, Area $= \frac{9\sqrt{3}}{2}\text{ cm}^2$
- ii. Length of side $m\overline{AB} = 4\sqrt{7}\text{ cm}$, Area $= 8\sqrt{3}\text{ cm}^2$
2. Length of side $\overline{AC} = \sqrt{116}\text{ cm}$, Area $= 12\text{ cm}^2$
3. Length of side $AC = \sqrt{232}\text{ cm}$, Area $= 24\text{ cm}^2$

Exercise 15.2

2. $m\overline{BC} = 46\text{ cm}$
3. Right triangle
4. length of median $\sqrt{\frac{7}{2}}\text{ cm}$

Review Exercise 15

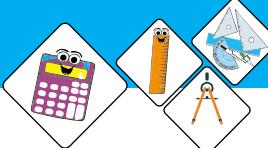
1. i. $(m\overline{BC})^2$ ii. Isosceles iii. $(m\overline{AC})^2$ iv. Triangle
2. $m\overline{AB} = 8\text{ cm}$

Exercise 16.1

1. i. $\sqrt{101}$ ii. 1 iii. $2\sqrt{2}$ iv. $2\sqrt{2}$
2. i. 5 ii. $\sqrt{117}$ iii. 5 iv. $\sqrt{10}$
3. $P = 12$

Exercise 16.2

4. Points A, B and C forms isosceles triangle.
5. Point A, B and C from right angled triangle.
6. $k = 1 \pm 3\sqrt{3}$
9. Because squares have equal sides and these points determine square.



Exercise 16.3

1. i. $(-1, 7)$ ii. $\left(1, \frac{1}{2}\right)$ iii. $(-4, 3)$ iv. $(\sqrt{3}, 2\sqrt{3})$

2. $(-1, 1)$ 3. $B = (2, 2)$ 4. center $(4, 5)$
radius $= 5\sqrt{2m}$

Review Exercise 16

1. i. True ii. False iii. False iv. False v. True
vi. True vii. True viii. True ix. False

2. i. $\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$ ii. Line iii. $y < 0$

3. i. c ii. a iii. d iv. d