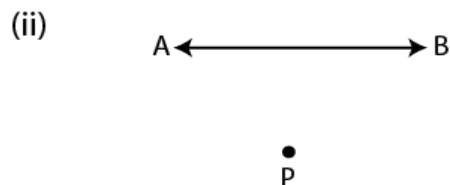
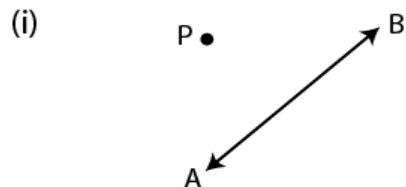


EXERCISE 17B

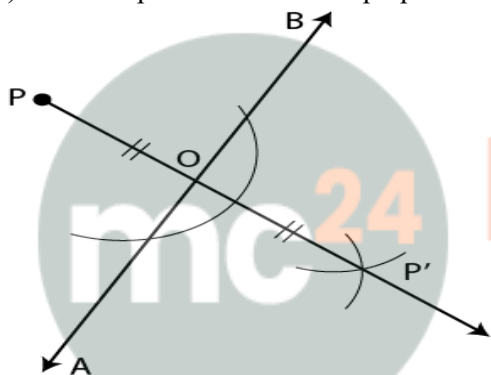
1. In each figure, given below, find the image of the point P in the line AB:



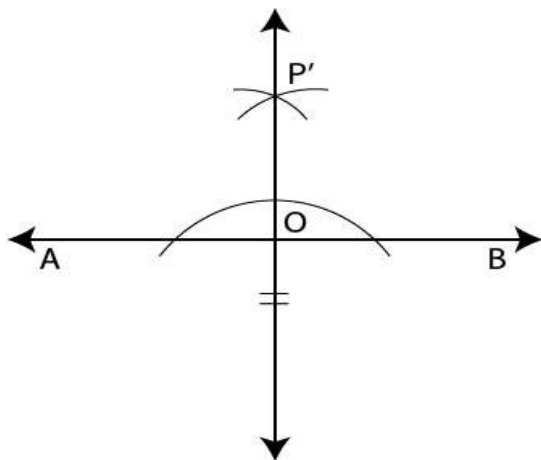
Solution:

Steps of Construction

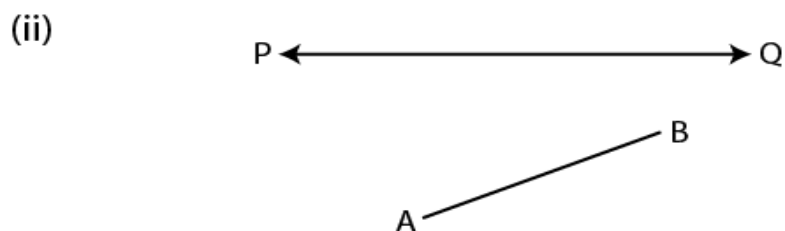
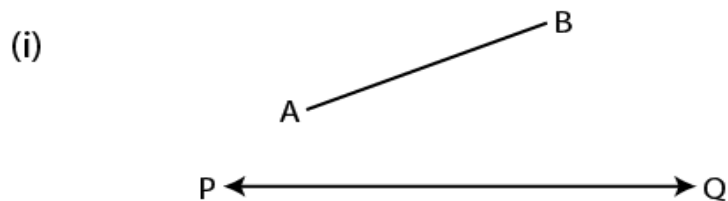
(i) From the point P construct a perpendicular to the given line AB which meets it at the point O.



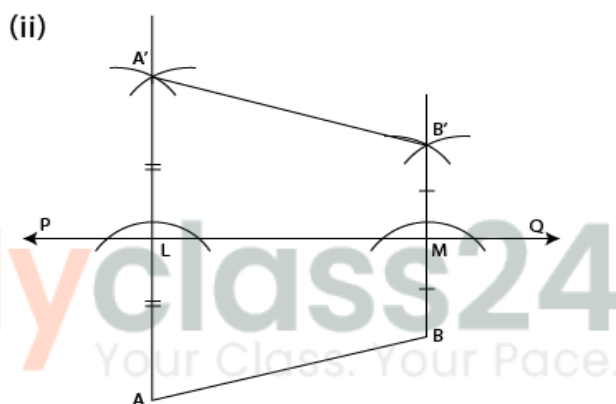
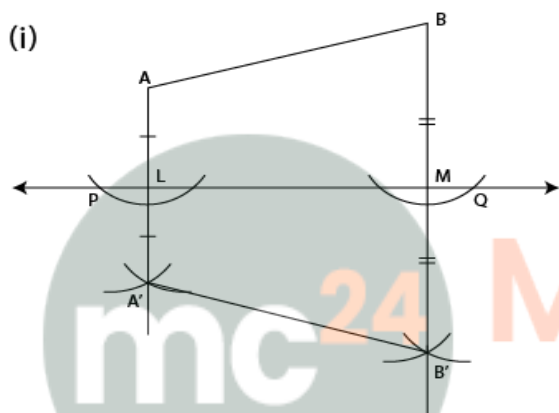
(ii) Produce PO at the point P' such that $OP' = PO$.
Here P' is the required image of P in AB.



2. In each figure, given below, find the image of the line segment AB in the line PQ:



Solution:



Steps of Construction

(i) From the points A and B construct perpendiculars on PQ which intersects PQ at the points L and M.

(ii) Produce AL to the point A' such that $AL = LA'$ and produce BM to B' such that $BM = MB'$. A'B' is the image of the line segment AB in PQ.

3. Complete the following table:

Selina Solutions Concise Maths Class 7 Chapter 17 –
Symmetry (Including Reflection and Rotation)

Point	Reflection		
	x-axis	y-axis	origin
(i) (8, 2)			
(ii) (5, 6)			
(iii) (4, -5)			
(iv) (6, -2)			
(v) (-3, 7)			
(vi) (-4, 5)			
(vii) (-2, -7)			
(viii) (-6, -3)			
(ix) (4, 0)			
(x) (-7, 0)			
(xi) (0, -6)			
(xii) (0, 8)			
(xiii) (0, 0)			

Solution:

Point	Reflection		
	x-axis	y-axis	origin
(i) (8, 2)	(8, -2)	(-8, 2)	(-8, -2)
(ii) (5, 6)	(5, -6)	(-5, 6)	(-5, -6)
(iii) (4, -5)	(4, 5)	(-4, -5)	(-4, 5)
(iv) (6, -2)	(6, 2)	(-6, -2)	(-6, 2)
(v) (-3, 7)	(-3, -7)	(3, 7)	(3, -7)
(vi) (-4, 5)	(-4, -5)	(4, 5)	(4, -5)
(vii) (-2, -7)	(-2, 7)	(2, -7)	(2, 7)
(viii) (-6, -3)	(-6, 3)	(6, -3)	(6, 3)
(ix) (4, 0)	(4, 0)	(-4, 0)	(-4, 0)
(x) (-7, 0)	(-7, 0)	(7, 0)	(7, 0)
(xi) (0, -6)	(0, 6)	(0, -6)	(0, 6)
(xii) (0, 8)	(0, -8)	(0, -8)	(0, -8)
(xiii) (0, 0)	(0, 0)	(0, 0)	(0, 0)

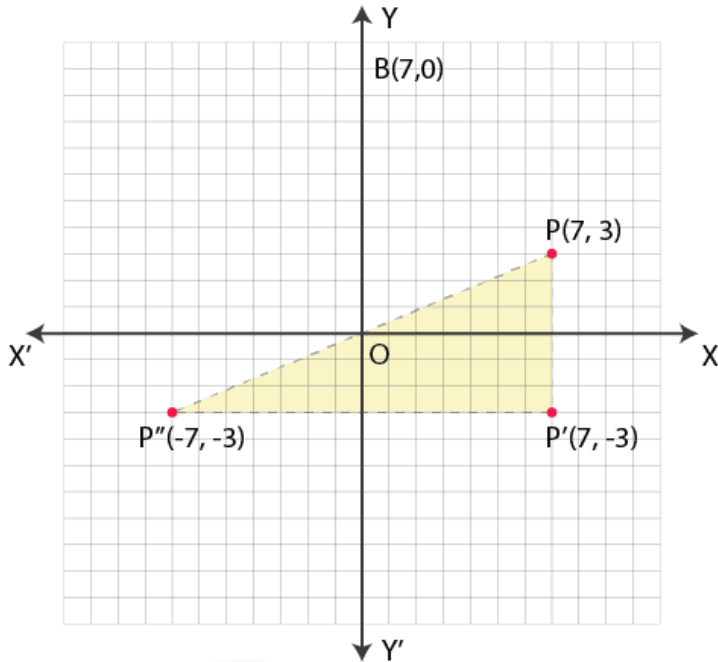
4. A point P (7, 3) is reflected in x-axis to point P'. The point P' is further reflected in y-axis to point P".

Find:

- (i) the co-ordinates of P'
- (ii) the co-ordinates of P"
- (iii) the image of P (7, 3) in origin.

Solution:

- (i) The image of point P (7, 3) when reflected in x-axis is P' whose co-ordinates will be (7, -3).
- (ii) The image of point P' (7, -3) when reflected in y-axis P" whose co-ordinates will be (-7, -3).
- (iii) The image of point P (7, 3) in the origin is P''' whose co-ordinates are (-7, -3).



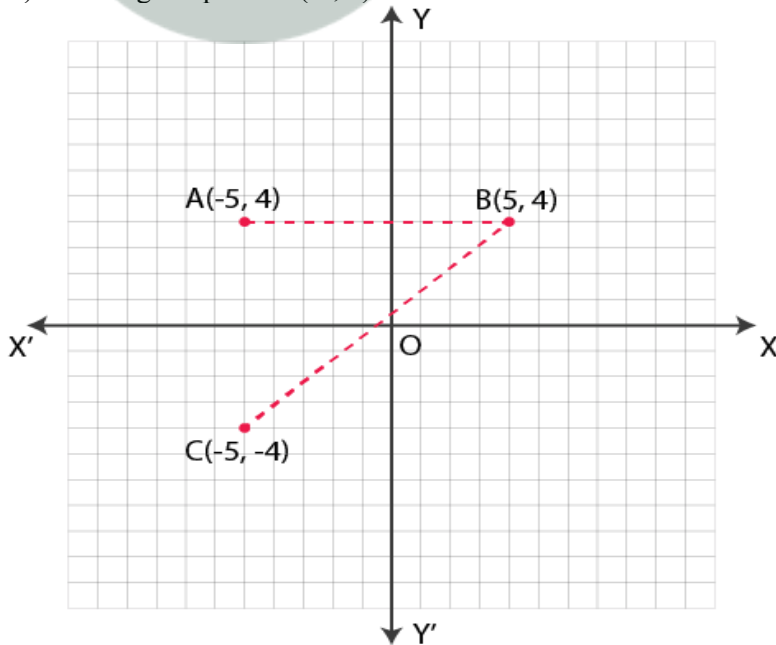
5. A point A (-5, 4) is reflected in y-axis to point B. The point B is further reflected in origin to point C.

Find:

- (i) the co-ordinates of B
- (ii) the co-ordinates of C
- (iii) the image of A (-5, 4) in x-axis.

Solution:

- (i) The image of point A (-5, 4) when reflected in y-axis is B whose co-ordinates will be (5, 4).
- (ii) The image of point B (5, 4) when reflected in origin is C whose co-ordinates will be (-5, -4).
- (iii) The image of point A (-5, 4) in x-axis is C whose co-ordinates are (-5, -4).



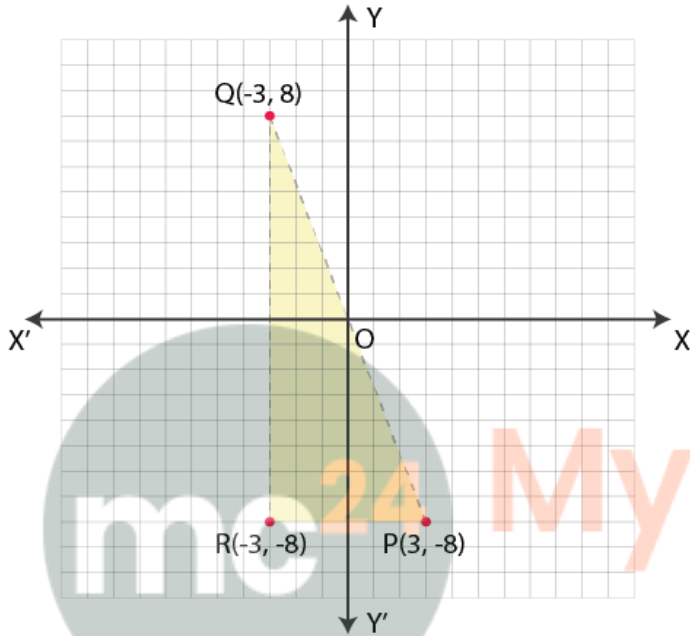
6. The point P (3, - 8) is reflected in origin to point Q. The Point Q is further reflected in x-axis to point R.

Find:

- (i) the co-ordinates of Q
- (ii) the co-ordinates of R
- (iii) the image of P (3, - 8) in y-axis.

Solution:

- (i) The image of point P (3, -8) when reflected in origin is Q whose co-ordinates will be (-3, 8).
- (ii) The image of point Q (-3, 8) when reflected in x-axis is R whose co-ordinates will be (-3, -8).
- (iii) The image of point P (3, 8) in y-axis is R whose co-ordinates are (-3, -8).

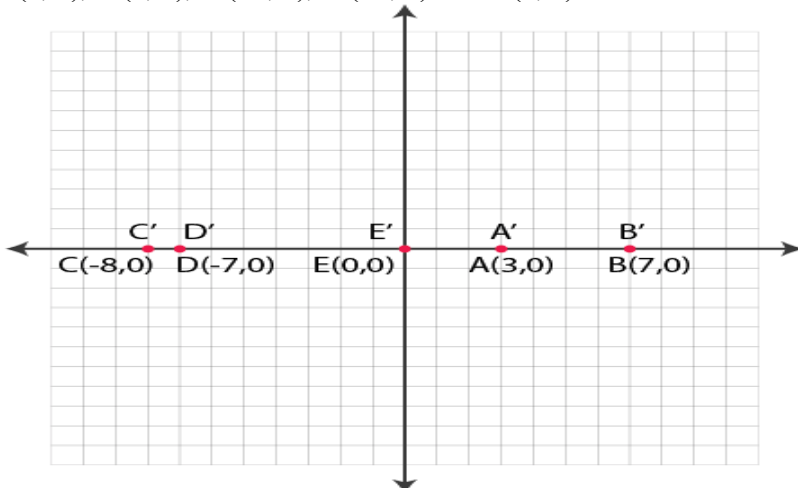


7. Each of the points A (3, 0), B (7, 0), C (- 8, 0), D (- 7, 0) and E (0, 0) is reflected in x-axis to points A', B', C', D' and E' respectively. Write the co-ordinates of each of the image points A', B', C', D' and E'.

Solution:

The points given are:

A (3, 0), B (7, 0), C (- 8, 0), D (- 7, 0) and E (0, 0)



The images will be reflected in x-axis

$A' (3, 0)$, $B' (7, 0)$, $C' (-8, 0)$, $D' (-7, 0)$ and $E' (0, 0)$ as the points lie on x-axis.

8. Each of the points A (0, 4), B (0, 10), C (0, -4), D (0, -6) and E (0, 0) is reflected in y-axis to points A', B', C', D' and E' respectively. Write the co-ordinates of each of the image points A', B', C', D' and E'.

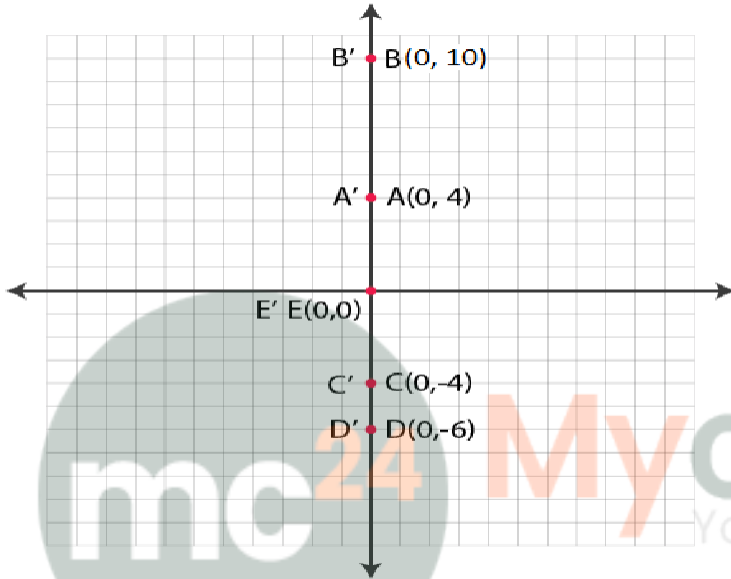
Solution:

The points given are

A (0, 4), B (0, 10), C (0, -4), D (0, -6) and E (0, 0) which are reflected on y-axis

The co-ordinates of their images will be

$A' (0, 4)$, $B' (0, 10)$, $C' (0, -4)$, $D' (0, -6)$ and $E' (0, 0)$ as they lie on y-axis.



9. Each of the points A (0, 7), B (8, 0), C (0, -5), D (-7, 0) and E (0, 0) are reflected in origin to points A', B', C', D' and E' respectively. Write the co-ordinates of each of the image points A', B', C', D' and E'.

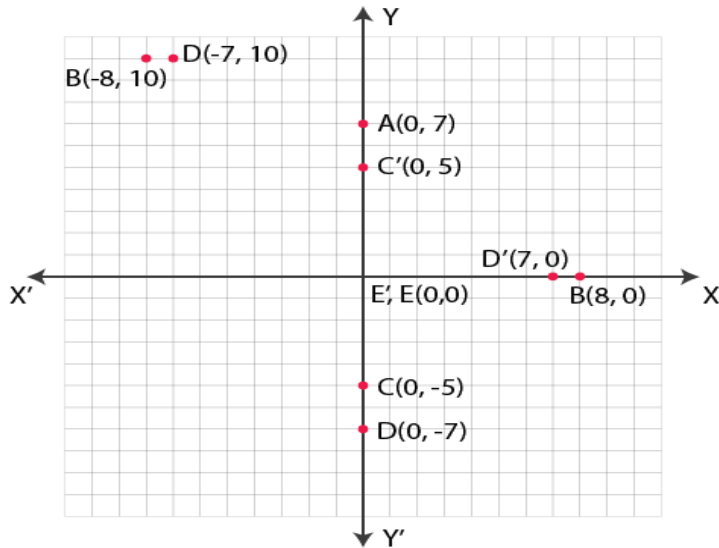
Solution:

It is given that

A (0, 7), B (8, 0), C (0, -5), D (-7, 0) and E (0, 0) are reflected in origin

The co-ordinates of their images will be

$A' (0, -7)$, $B' (-8, 0)$, $C' (0, 5)$, $D' (7, 0)$ and $E' (0, 0)$

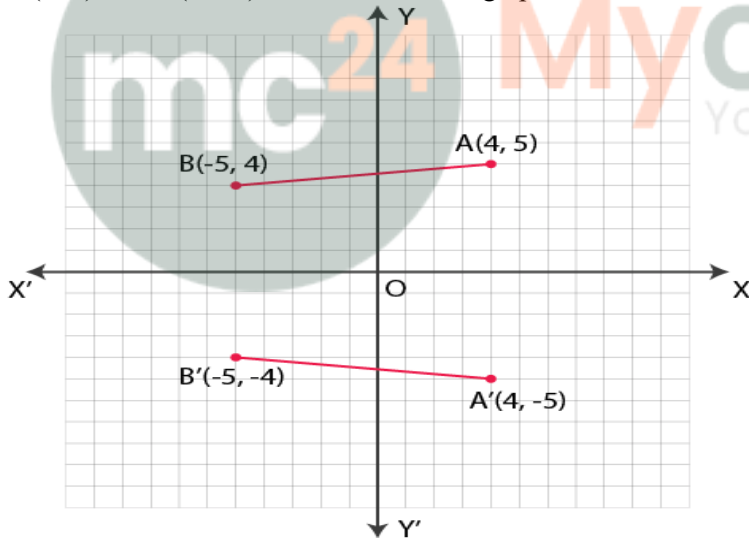


10. Mark points A (4, 5) and B (-5, 4) on a graph paper. Find A', the image of A in x-axis and B', the image of B in x-axis. Mark A' and B' also on the same graph paper. Join AB and A' B' and find if $AB = A' B'$?

Solution:

It is given that

A (4, 5) and B (-5, 4) are marked on the graph.



The image of A in x-axis A (4, -5) and the image of B in x-axis is B' (-5, -4) which are plotted on the same graph. AB and A'B' are joined.

Here $AB = A' B'$.

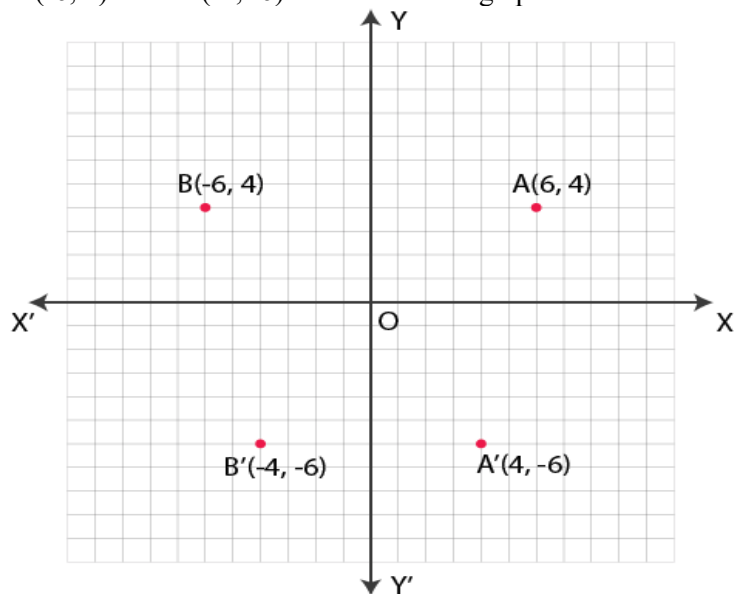
11. Mark points A (6, 4) and B (4, -6) on a graph paper. Find A', the image of A in y-axis and B', the image of B in y-axis. Mark A' and B' also on the same graph paper.

Solution:

The points given are

A (6, 4) and B (4, -6)

The images of A and B in y-axis are
 $A'(-6, 4)$ and $B'(-4, -6)$ as shown in the graph



12. Mark points A (- 6, 5) and B (- 4, - 6) on a graph paper. Find A', the image of A in origin and B', the image of B in origin. Mark A' and B' also on the same graph paper. Join AB and A' B' and find if $AB = A'B'$?

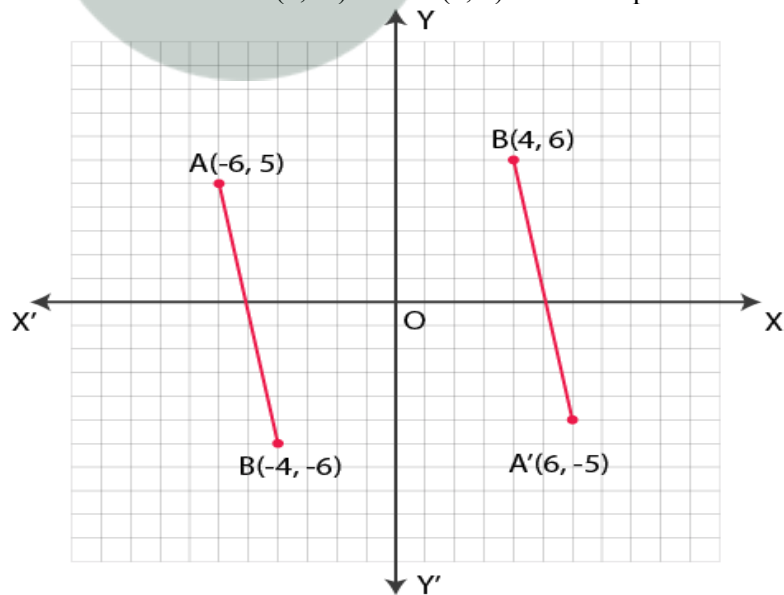
Solution:

The points given are

A (- 6, 5) and B (- 4, - 6)

The images of A and B in the origin are A' and B'

The co-ordinates are A' (6, -5) and B' (4, 6) which are plotted in the graph.



Join AB and A'B'.

Here $AB = A'B'$.