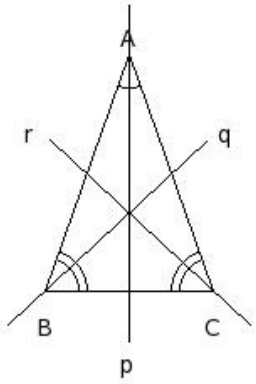
EduSahara™ Worksheet

Name : Chapter Based Worksheet

Chapter : Symmetry, Reflection and Rotation

Grade : ICSE Grade VIII

1. Identify the line(s) of symmetry in the following figure



(i) { p, q, r } (ii) none (iii) p (iv) r (v) q

2. The English alphabet letter 'F' has how many lines of symmetry?

(i) infinite (ii) zero (iii) two (iv) one (v) three

3. Find the image of the point $((-3),(-3))$ when reflected in the origin

(i) $(3,(-3))$ (ii) $(4,3)$ (iii) $((-3),3)$ (iv) $(3,3)$

4. Which of the following quadrilaterals have point symmetry?

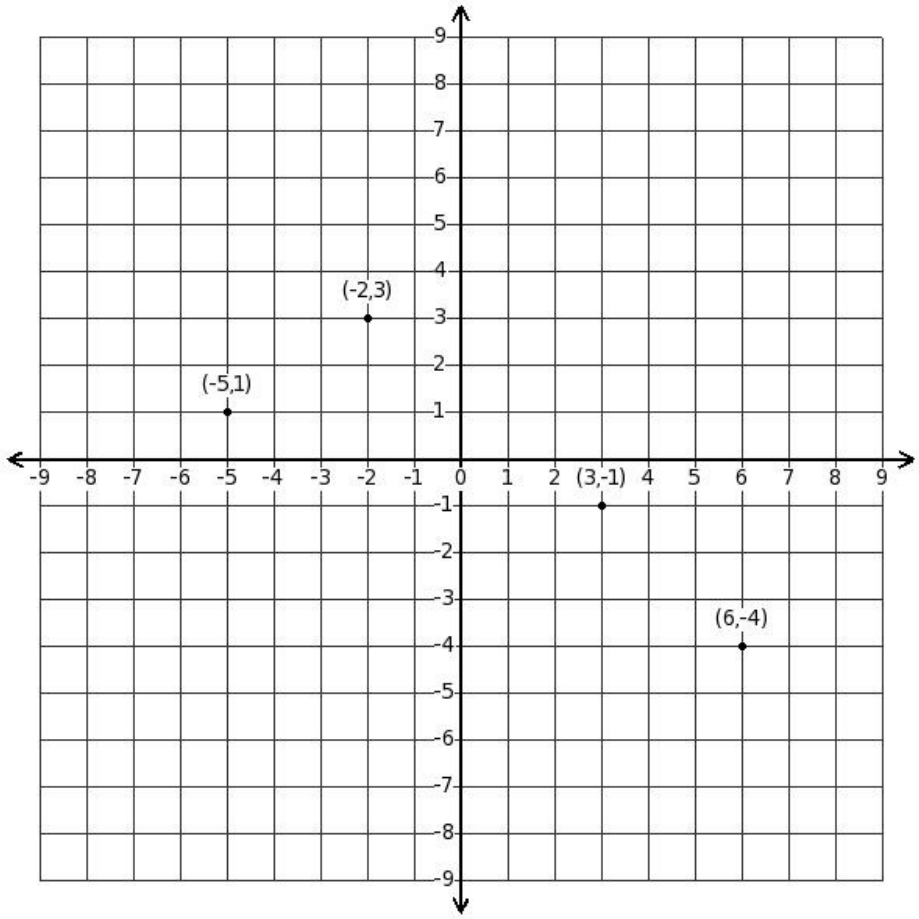
a) trapezium
b) square
c) rectangle
d) parallelogram
e) rhombus
f) kite
g) isosceles trapezium

(i) {f,e,b} (ii) {a,b} (iii) {b,c,d,e} (iv) {g,a,d} (v) {f,c}

5. Which of the following points is invariant under reflection in x-axis

(i) $((-5),4)$ (ii) $(9,7)$ (iii) $(6,0)$ (iv) $((-1),(-7))$ (v) $(9,(-7))$

6. Write down the coordinates when reflected in the x-axis



(i) $((-2),(-3)),(3,1),(6,4),((-5),(-1))$ (ii) $((-2),(-3)),(3,1),(7,3),((-5),(-1))$

(iii) $(0,(-1)),(3,1),(6,4),((-5),(-1))$ (iv) $((-2),(-3)),(3,1),(6,4),((-6),0)$

(v) $((-2),(-3)),(3,1),(4,2),((-5),(-1))$

7. Find the new position of point $((-1),(-3))$ when rotated through $180°$ clockwise about the origin

(i) $(1,(-3))$ (ii) $((-1),(-3))$ (iii) $(1,3)$ (iv) $(3,1)$ (v) $((-1),3)$

8. Which of the following English alphabet letters does not have point symmetry?

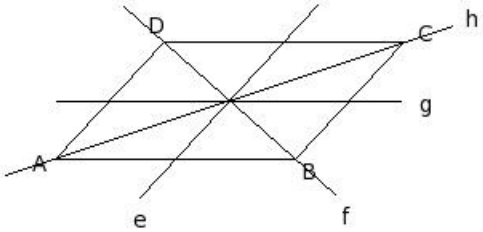
(i) N (ii) X (iii) A (iv) O (v) H

9. Which of the following quadrilaterals have zero lines of symmetry?

a) square
b) rectangle
c) kite
d) parallelogram
e) rhombus
f) isosceles trapezium
g) trapezium

(i) {a,d} (ii) {b,g} (iii) {c,e,d} (iv) {f,g,d} (v) {d,g}

10. Which of the following are line(s) of symmetry for the given parallelogram?



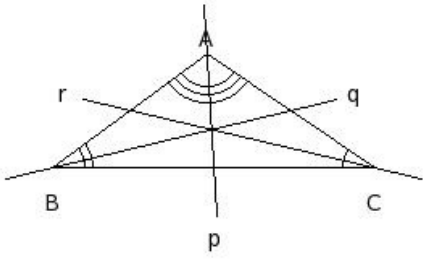
(i) h (ii) e (iii) none (iv) { f, h } (v) g

11. Which of the following figures have one line of symmetry?

a) angle with equal arms
b) equilateral triangle
c) angle with unequal arms
d) right angled triangle
e) line segment
f) isosceles triangle
g) scalene triangle
h) isosceles right angled triangle

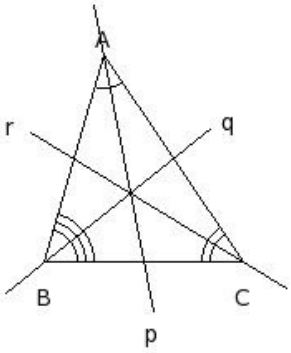
(i) {c,f} (ii) {d,e,h} (iii) {g,a,f} (iv) {b,a} (v) {a,f,h}

12. Identify the line(s) of symmetry in the following figure



(i) r (ii) p (iii) none (iv) q (v) { p, q, r }

13. Identify the line(s) of symmetry in the following figure



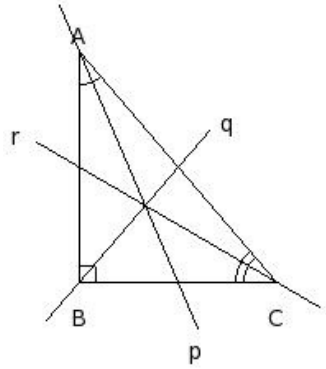
(i) p (ii) q (iii) r (iv) none (v) { p, q, r }

14. Find the image of the rectangle formed by $((-3),(-6)),(4,(-6)),(4,(-1))$ and $((-3),(-1))$ when rotated about the origin by $180°$

(i) $(3,6),((-4),6),((-4),1),(2,2)$ (ii) $(3,6),((-4),6),((-6),(-1)),(3,1)$ (iii) $(3,6),((-4),6),((-3),0),(3,1)$

(iv) $(3,6),((-4),6),((-4),1),(3,1)$ (v) $(5,8),((-4),6),((-4),1),(3,1)$

15. Identify the line(s) of symmetry in the following figure



(i) r (ii) q (iii) { p, q, r } (iv) p (v) none

16. Which of the following English alphabet letters have two lines of symmetry?

(i) T (ii) A (iii) Z (iv) L (v) I

17. Which of the following figures have point symmetry?

a) sector of a circle
b) circle
c) regular hexagon
d) semicircle
e) regular pentagon
f) regular octagon
g) regular heptagon

(i) {a,b} (ii) {b,c,f} (iii) {d,c} (iv) {e,g,f} (v) {a,b,c}

18. Find the new position of point $((-8),4)$ when rotated through $180°$ anticlockwise about the origin

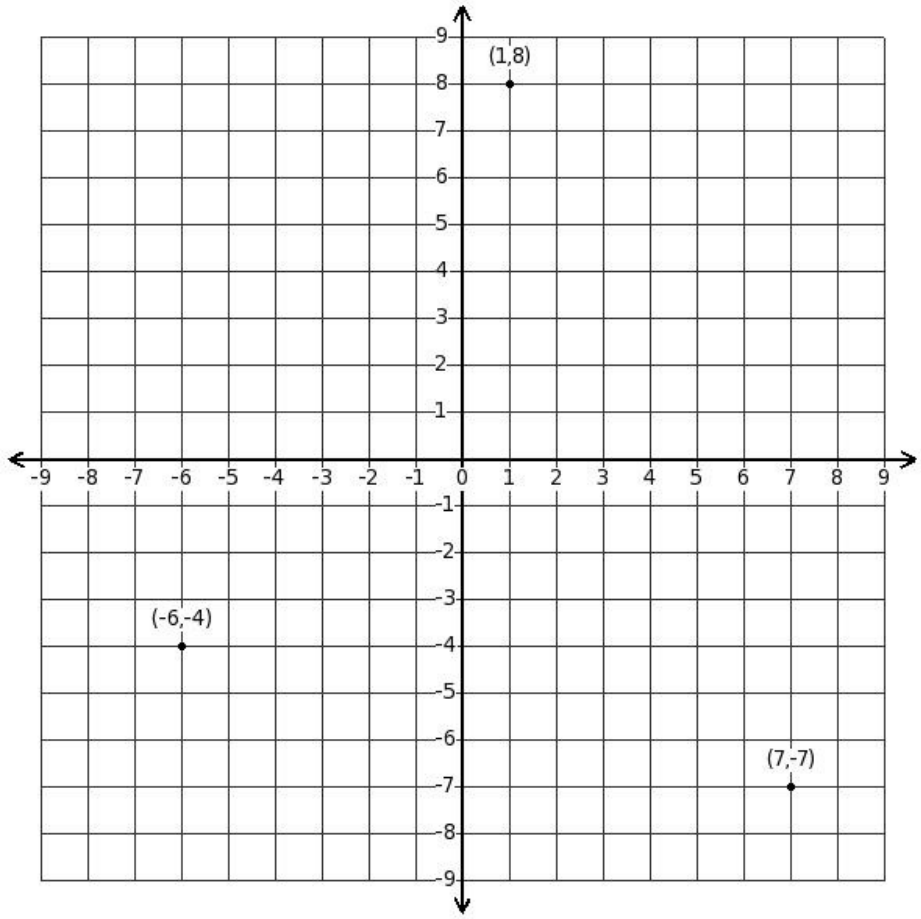
(i) $((-8),(-4))$ (ii) $(8,(-4))$ (iii) $((-8),4)$ (iv) $(8,4)$ (v) $((-4),8)$

19. Which of the following are true?

a) A semi-circle has rotational symmetry of order two.
b) A rectangle has rotational symmetry of order four.
c) A rhombus has rotational symmetry of order four.
d) A parallelogram has rotational symmetry of order four.
e) A square has rotational symmetry of order four.

(i) {e} (ii) {c,d,e} (iii) {a,e} (iv) {b,e}

20. Write down the coordinates when reflected in the y-axis



(i) $((-2),9),((-7),(-7)),(6,(-4))$ (ii) $((-1),8),((-7),(-7)),(6,(-4))$ (iii) $((-1),8),((-7),(-7)),(4,(-6))$

(iv) $((-1),8),((-5),(-5)),(6,(-4))$ (v) $((-1),8),((-7),(-7)),(7,(-5))$

21. A figure possesses point symmetry if it regain its shape after rotating

(i) 270° (ii) 90° (iii) 180° (iv) 360°

22. A figure possesses rotational symmetry if it regain its shape after rotating

a) 90°
b) 270°
c) 360°
d) 180°

(i) {c,b} (ii) {a,b,d} (iii) {c,a,b} (iv) {c,a} (v) {c,d}

23. Write down the coordinates when reflected in the origin $((-3),(-8)),((-3),(-1)),(7,(-6))$

(i) $(3,8),(3,1),((-7),6)$ (ii) $(3,8),(3,1),((-6),5)$ (iii) $(3,8),(3,1),((-9),4)$ (iv) $(3,8),(5,3),((-7),6)$

(v) $(2,9),(3,1),((-7),6)$

24. Write down the coordinates when reflected in the y-axis $((-3),0),((-3),8),((-7),9)$

(i) $(3,0),(3,8),(7,9)$ (ii) $(2,1),(3,8),(7,9)$ (iii) $(3,0),(3,8),(8,8)$ (iv) $(3,0),(5,10),(7,9)$

(v) $(3,0),(3,8),(5,7)$

25. Which of the following English alphabet letters has rotational symmetry?

(i) C (ii) D (iii) A (iv) G (v) N

Assignment Key

1) (iii)	2) (ii)	3) (iv)	4) (iii)	5) (iii)	6) (i)
7) (iii)	8) (iii)	9) (v)	10) (iii)	11) (v)	12) (iii)
13) (iv)	14) (iv)	15) (v)	16) (v)	17) (ii)	18) (ii)
19) (i)	20) (ii)	21) (iii)	22) (ii)	23) (i)	24) (i)
25) (v)					