EduSahara™ Worksheet

Name : Chapter Based Worksheet

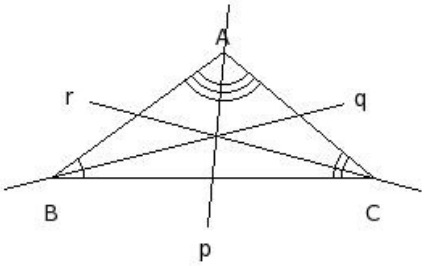
Chapter : Symmetry, Reflection and Rotation

Grade : ICSE Grade VII

1. Which of the following English alphabet letters does not have rotational symmetry?

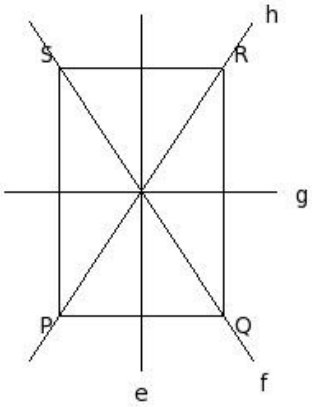
   (i) I (ii) S (iii) A (iv) N (v) Z

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



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

3. Which of the following are line(s) of symmetry for the given rectangle?



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

4. Which of the following figures have infinite lines of symmetry?

   a) sector of a circle
   b) line segment
   c) circle
   d) n-sided polygon where n is very large
   e) semicircle

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

5. Which of the following figures have point symmetry?

   a) line segment
   b) isosceles triangle
   c) equilateral triangle
   d) isosceles right angled triangle
   e) right angle triangle
   f) scalene triangle

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

6. Write down the coordinates when reflected in the origin $((-6),4),(9,1),((-1),(-2))$

(i) $(6,(-4)),((-7),1),(1,2)$ (ii) $(6,(-4)),((-9),(-1)),((-1),0)$ (iii) $(5,(-3)),((-9),(-1)),(1,2)$

(iv) $(6,(-4)),((-9),(-1)),(2,1)$ (v) $(6,(-4)),((-9),(-1)),(1,2)$

7. Which of the following are true?

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

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

8. Which of the following figures have all symmetries viz. line symmetry, point symmetry and rotational symmetry?

a) regular pentagon
b) parallelogram
c) equilateral triangle
d) circle
e) regular hexagon
f) angle with equal arms
g) square
h) line segment

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

9. Which of the following are true?

a) Axis of symmetry of a figure need not intersect with the figure at any point.
b) For every point on the figure on one side of the axis of symmetry, there is a corresponding point on the other side.
c) A line segment has one line of symmetry.
d) A figure can have multiple axes of symmetry.
e) Line of symmetry and axis of symmetry are same.
f) Line of symmetry is perpendicular to axis of symmetry.
g) A figure can be broken into two congruent shapes about its axis of symmetry.
h) An obtuse angled triangle has zero lines of symmetry.

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

10. Which of the following points is invariant under reflection in y-axis

(i) $(0,4)$ (ii) $((-6),3)$ (iii) $(5,(-9))$ (iv) $((-3),(-5))$ (v) $(1,3)$

11. Write down the coordinates when reflected in the x-axis $((-1),(-2)),(7,8),(0,5),((-8),3)$

(i) $((-1),2),(7,(-8)),(0,(-5)),((-8),(-3))$ (ii) $((-1),2),(7,(-8)),((-2),(-7)),((-8),(-3))$

(iii) $((-1),2),(7,(-8)),(0,(-5)),((-9),(-2))$ (iv) $(1,4),(7,(-8)),(0,(-5)),((-8),(-3))$

(v) $((-1),2),(7,(-8)),(1,(-6)),((-8),(-3))$

12. Which of the following English alphabet letters have zero lines of symmetry?

(i) I (ii) X (iii) V (iv) B (v) L

13. Which of the following are true?

a) If a figure does not have line symmetry, it does not have rotational symmetry too.
b) A circle has infinite points of symmetry.
c) If a figure does not have point symmetry, it does not have rotational symmetry too.
d) All regular polygons have point symmetry.
e) If a figure does not have rotational symmetry, it does not have point symmetry too.
f) If a figure does not have point symmetry, it does not have line symmetry too.
g) If a figure has line symmetry, it also has rotational symmetry.

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

14. Write down the coordinates when reflected in the origin $((-4),(-4)),(0,8),(3,1),((-1),(-3))$

(i) $(4,4),(0,(-8)),((-5),(-3)),(1,3)$ (ii) $(4,4),(0,(-8)),((-3),(-1)),(0,4)$

(iii) $(4,4),(0,(-8)),((-3),(-1)),(1,3)$ (iv) $(6,6),(0,(-8)),((-3),(-1)),(1,3)$

(v) $(4,4),(0,(-8)),((-2),(-2)),(1,3)$

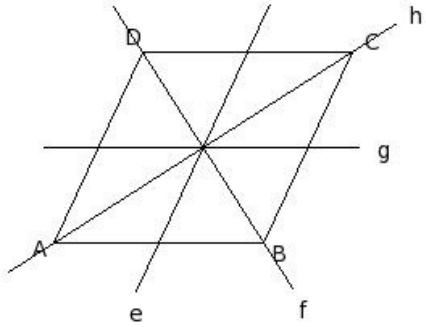
15. Find the image of the point $((-1),(-2))$ when reflected in y-axis

(i) $((-1),2)$ (ii) $(2,(-2))$ (iii) $(1,2)$ (iv) $((-2),1)$ (v) $(1,(-2))$

16. Find the image of the point $A(1,7)$ under the reflection of a point $P((-1),7)$

(i) $((-4),8)$ (ii) $((-5),5)$ (iii) $((-3),7)$ (iv) $((-2),6)$ (v) $((-1),9)$

17. Which of the following are line(s) of symmetry for the given rhombus?



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

18. Which of the following quadrilaterals have point symmetry?

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

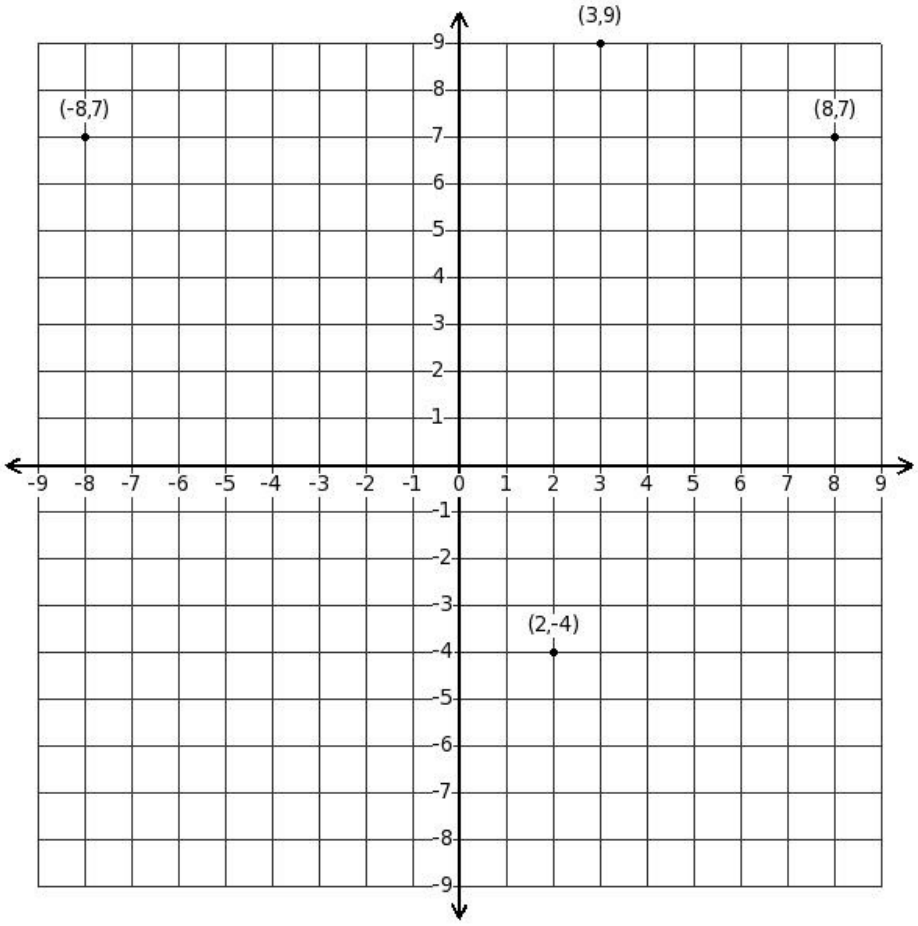
(i) {d,g,b} (ii) {b,c,e,g} (iii) {a,b} (iv) {f,a,e} (v) {d,c}

19. Which of the following figures have three lines of symmetry?

a) isosceles right angled triangle
b) isosceles triangle
c) line segment
d) right angle triangle
e) scalene triangle
f) equilateral triangle

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

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

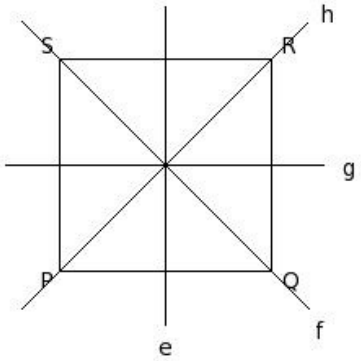


(i) $((-6),9),((-2),(-4)),(8,7),((-3),9)$ (ii) $((-8),7),((-2),(-4)),(9,6),((-3),9)$

(iii) $((-8),7),((-2),(-4)),(8,7),((-4),10)$ (iv) $((-8),7),((-2),(-4)),(8,7),((-3),9)$

(v) $((-8),7),((-2),(-4)),(6,5),((-3),9)$

21. Which of the following are line(s) of symmetry for the given square?



(i) e (ii) { e, f, g, h } (iii) h (iv) f (v) { f, h }

22. Find the image of the rectangle formed by $((-1),(-5)),(5,(-5)),(5,(-2))$ and $((-1),(-2))$ when rotated about the origin by $90°$

(i) $(5,(-1)),(5,5),(0,3),(2,(-1))$ (ii) $(5,(-1)),(5,5),(2,5),(1,0)$ (iii) $(5,(-1)),(5,5),(2,5),(2,(-1))$

(iv) $(5,(-1)),(5,5),(3,4),(2,(-1))$ (v) $(7,1),(5,5),(2,5),(2,(-1))$

23. Write down the coordinates when reflected in the x-axis $(5,0),((-8),3),((-6),1)$

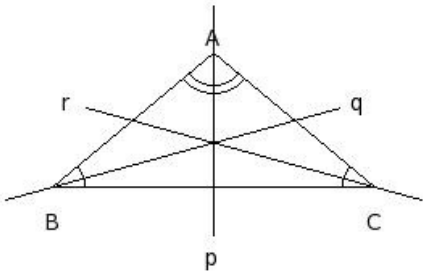
(i) $(5,0),((-8),(-3))$ (ii) $(5,0),((-6),(-1))$ (iii) $(4,1),((-8),(-3)),((-6),(-1))$

(iv) $(5,0),((-8),(-3)),((-6),(-1))$ (v) $(5,0),((-8),(-3)),((-5),(-2))$

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

(i) O (ii) H (iii) X (iv) J (v) Z

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



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

Assignment Key

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