

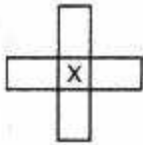
RD Sharma
Solutions

Class 7

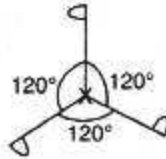
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1. Give the order of rotational symmetry for each of the following figures when rotated about the marked point (x):



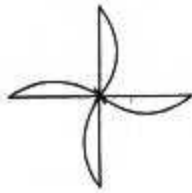
(i)



(ii)



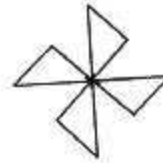
(iii)



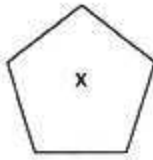
(iv)



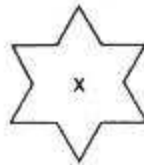
(v)



(vi)



(vii)



(viii)



(ix)

Solution (i) Figure (i) has rotational symmetry 4.

(ii) order of symmetry 3.

(iii) order of rotational symmetry 3.

(iv) order of rotational symmetry 4.

(v) order of rotational symmetry 2

(vi) order of rotational symmetry 4

(vii) order of rotational symmetry 5.

(viii) order of rotational symmetry 6

(ix) order of rotational symmetry 3.

Q.2 Name any two figures that have both lines Symmetry and rotational symmetry.

Solution: An equilateral triangle, square.

Q.3 Give an example of a figure that has a line of Symmetry but does not have rotational symmetry.

Solution: A semicircle, Isosceles triangle.

Q.4 Give an example of a geometrical figure which has neither a line of Symmetry nor a rotational Symmetry.

Solution: A scalene triangle.

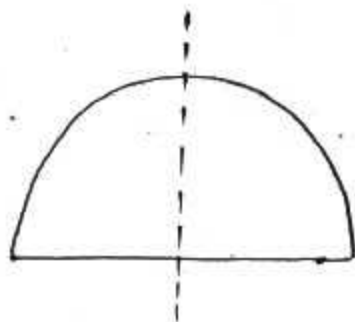
Q.5 Give an example of a letter of the English alphabet which has (i) no line of Symmetry (ii) rotational Symmetry of order 2

Solution: (i) The English alphabet 'z' has no line of Symmetry

(ii) 'N' has rotational Symmetry of order 2.

Q6 What is the line of symmetry of a semicircle
does it have rotational symmetry?

Solution: A semicircle has only one line of symmetry



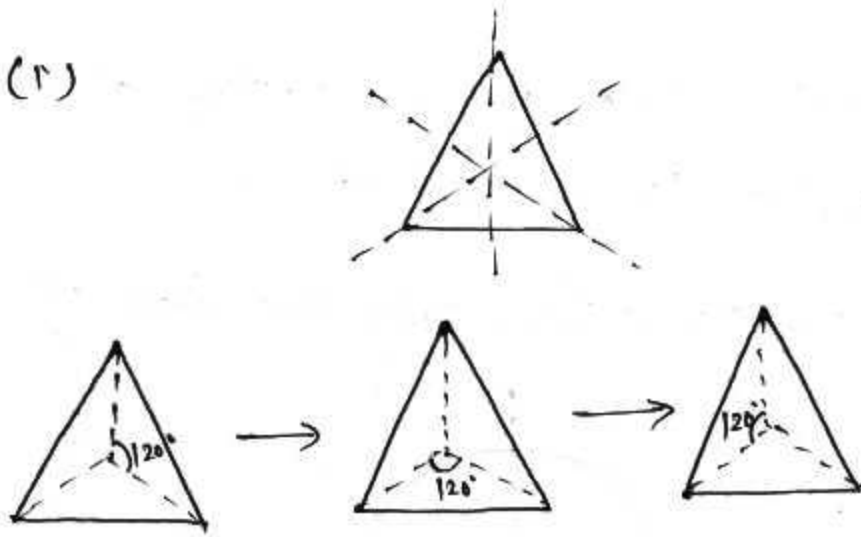
here line of symmetry is perpendicular bisector of diameter.

A semicircle has no line of symmetry.

Q7 Draw, whenever possible, a rough sketch of

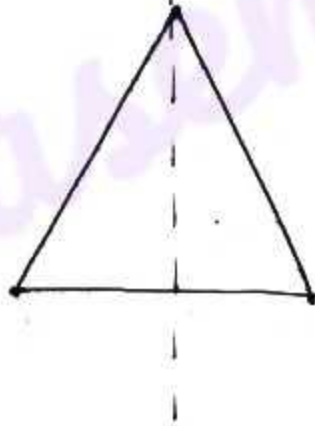
- (i) a triangle with both line and rotational symmetries.
- (ii) a triangle with only line symmetry and no rotational symmetry.
- (iii) A quadrilateral with a rotational symmetry but not a line of symmetry.
- (iv) A quadrilateral with line symmetry but not a rotational symmetry.

Solution (r)

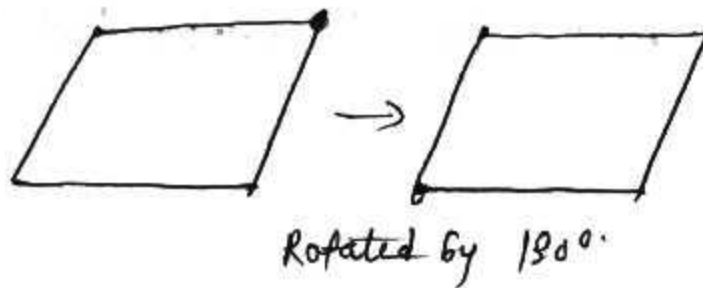


An equilateral triangle has 3 lines of symmetry and a rotational symmetry of order 3.

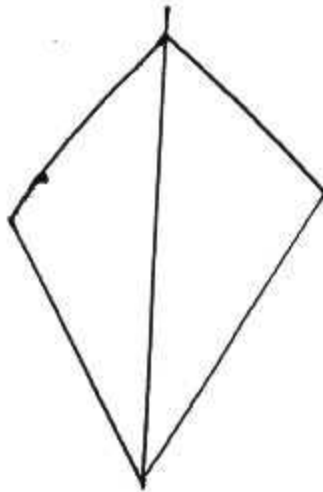
- (i) An isosceles triangle has only 1 line of symmetry and no rotational symmetry.



- (ii) A parallelogram, which has no line of symmetry but rotational symmetry of order 2.



(1v) A kite is a quadrilateral which has only one line of symmetry and no rotational symmetry.



Q.8

8. Fill in the blanks:

Figures	Centre of rotation	Order of rotation	Angle of rotation
Square			
Rectangle			
Rhombus			
Equilateral triangle			
Regular hexagon			
Circle			
Semi-circle			

Solution

Figure	Centre of rotation	Order of rotation	Angle of rotation
Square	Point of intersection of the line segments joining the mid-points of opposite sides.	4	90°
Rectangle	Point of intersection of the line segments joining the mid-points of opposite sides.	2	180°
Rhombus	Point of intersection of diagonals	2	180°
Equilateral triangle	Point of intersection of angle bisectors i.e. centroid	3	120°
Regular hexagon	Centre of the hexagon	6	60°
Circle	Centre of the circle	Unlimited	Any angle
Semi-circle	Nil	Nil	Nil

9. Fill in the blanks:

English alphabet Letter	Line Symmetry	Number of Lines of symmetry	Rotational Symmetry	Order of rotational Symmetry
Z	Nil	0	Yes	2
S	-	-	-	-
H	Yes	-	Yes	-
O	Yes	-	Yes	-
E	Yes	-	-	-
N	-	-	Yes	-
C	-	-	-	-

Solution

English alphabet Letter	Line Symmetry	Number of Lines of symmetry	Rotational Symmetry	Order of rotational Symmetry
Z	No	0	Yes	2
S	No	0	Yes	2
H	Yes	2	Yes	2
O	Yes	4	Yes	2
E	Yes	1	No	0
N	No	0	Yes	2
C	Yes	1	No	0

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