MATHEMATICS

Class-7th

Chapter-14

Symmetry

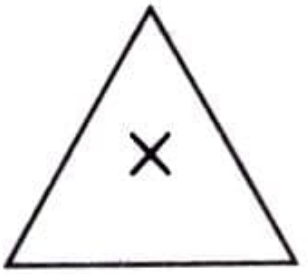
Exercise-14.2

By:-A.K.Jha

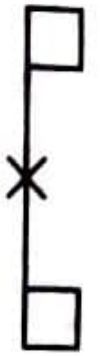
TEXTBOOK EXERCISE 14.2

Q. 1. Which of the following figures have rotational symmetry of order more than 1?

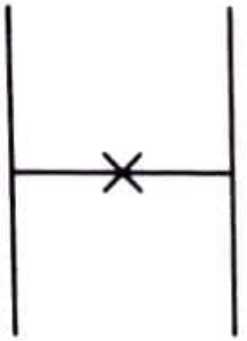
(*a*)



(*b*)

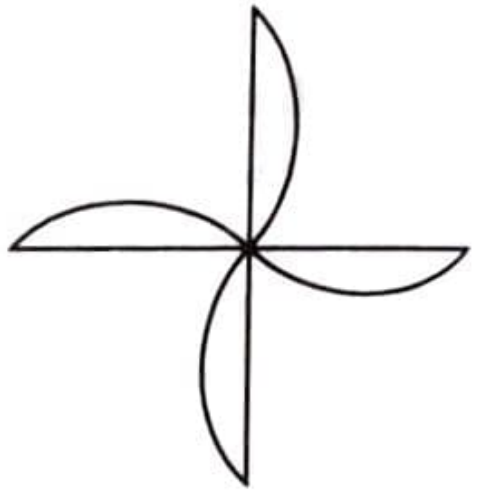


(*c*)



(*d*)

(*e*)



(*f*)

Sol. Figure (*a*) has rotational symmetry about the marked point through an angle of 90°.

Figure (*b*) has rotational symmetry about the marked point through an angle of 360°.

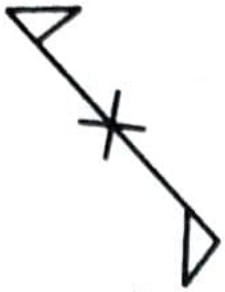
Figure (*c*) has no rotational symmetry about the marked point.

Figure (*d*) has rotational symmetry about the marked point through an angle of 180°.

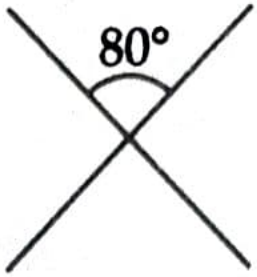
Figure (*e*) has rotational symmetry about the marked point through an angle of 120°.

Figure (*f*) has rotational symmetry about the marked point through an angle of 90°.

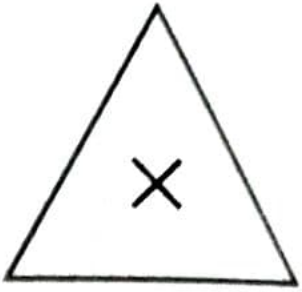
Q 2. Give the order of rotational symmetry for each figure:



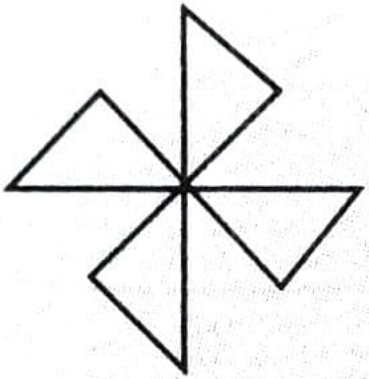
(a)



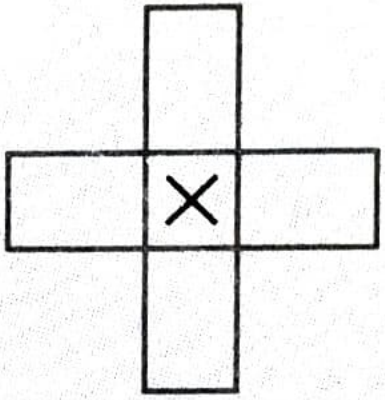
(b)



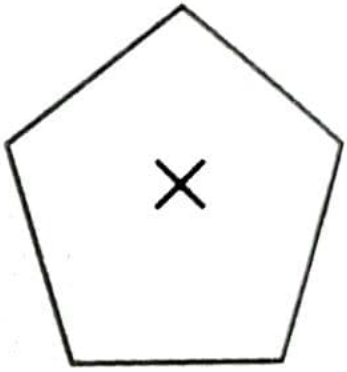
(c)



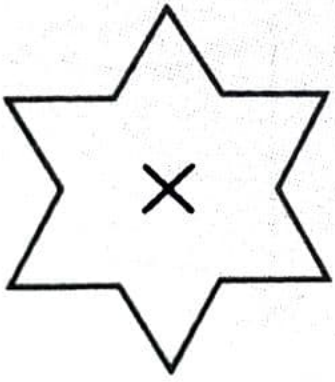
(d)



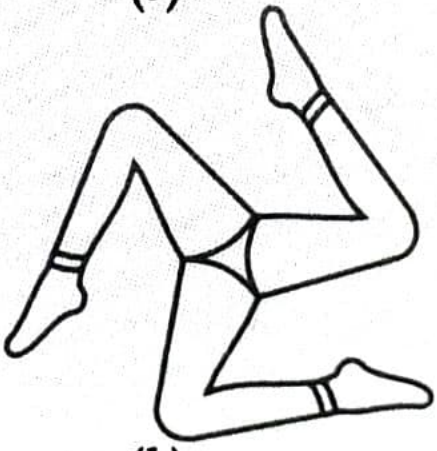
(e)



(f)



(g)



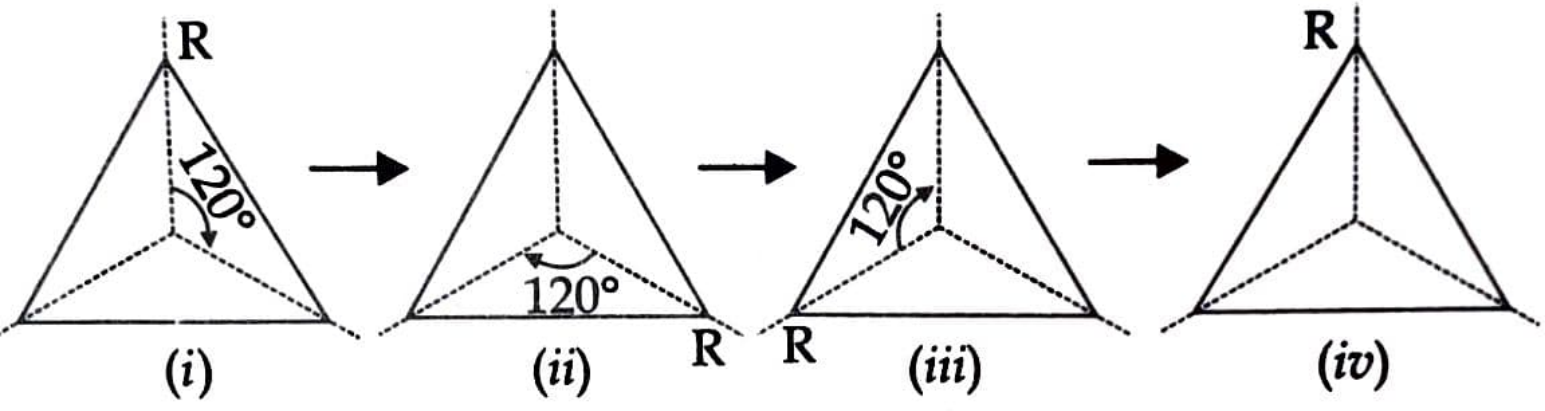
(h)

Sol. Order of rotational symmetry for each figure are below:

Figure No.	Order of rotational Symmetry
a	2
b	2
c	3
d	4
e	4
f	5
g	6
h	3

Try These [Textbook page 272]

Q. 1. (*a*) Can you now tell the order of the rotational symmetry for an equilateral triangle?



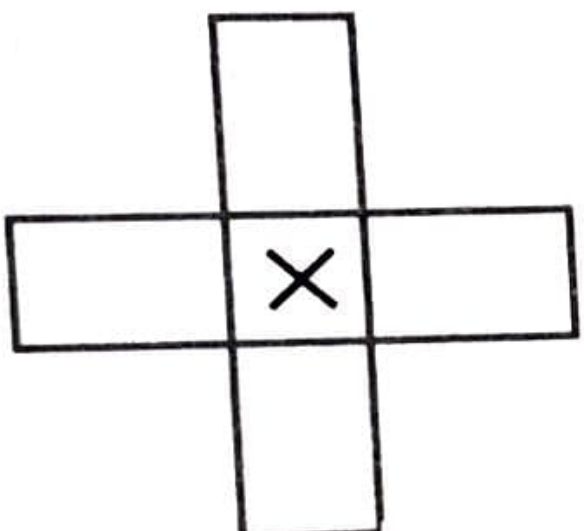
(*b*) How many positions are there at which the triangle looks exactly the same, when rotated about its centre by 120°?

Sol. (*a*) The order of rotational symmetry for an equilateral triangle is 3, since the triangle takes 3 turns to reach its original position.

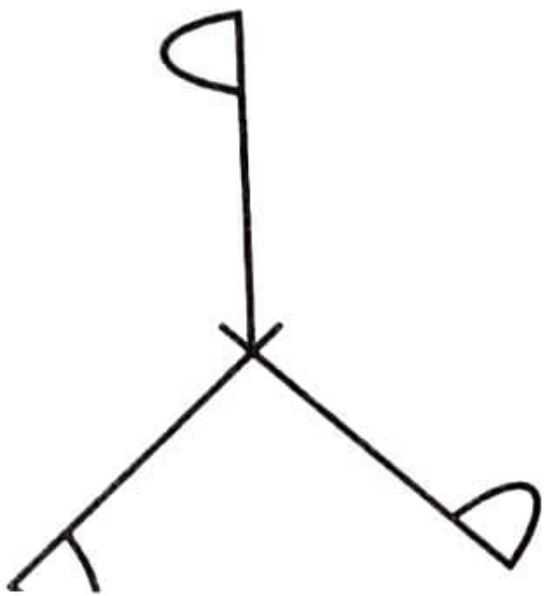
(*b*) The triangle looks the same in all the 3 positions when rotated about its center by 120°.

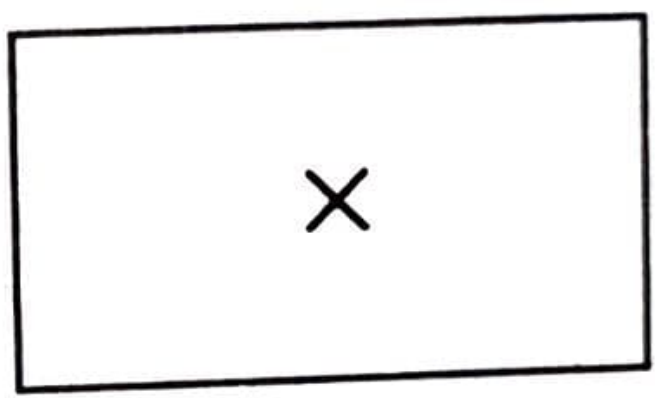
Try These [Textbook page 273]

Q. 1. Give the order of the rotational symmetry of the given figures about the point marked × in figure:



(*i*)





(*iii*)

Sol. Order of rotational symmetry of given figures are:

(*i*) Four (*ii*) Three (*iii*) Four.