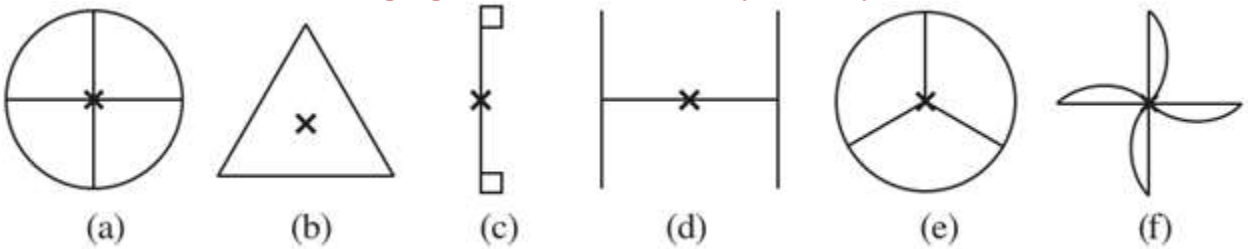
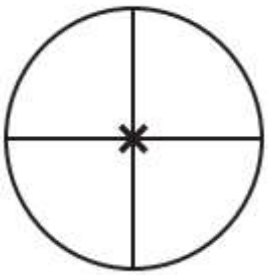
Symmetry: Exercise 14.2

Q.1 Which of the following figures have rational symmetry of order more than 1:

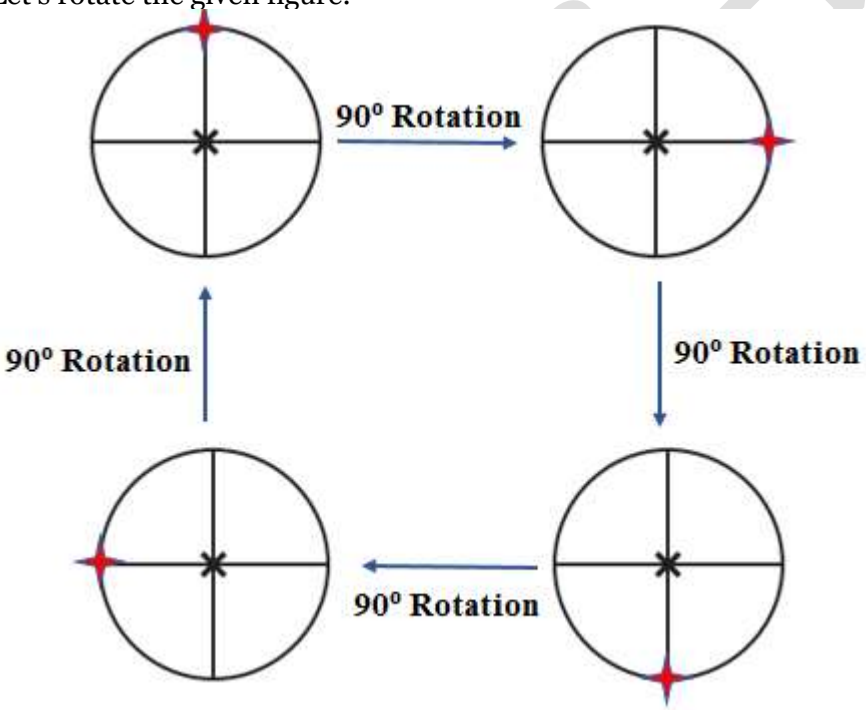


Sol:

(a) Given figure:

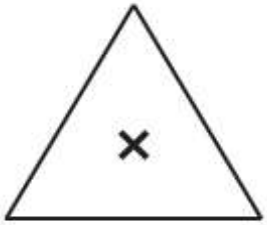


Let's rotate the given figure:

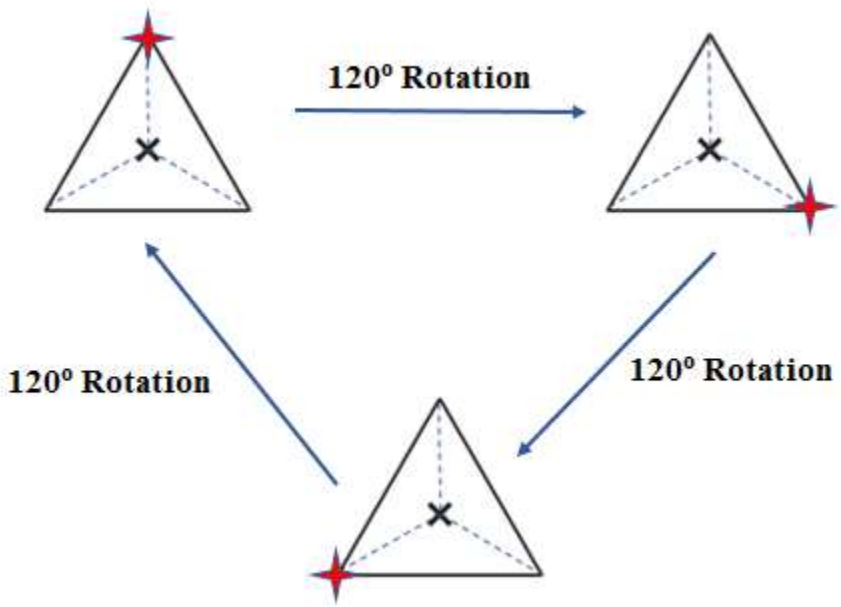


From above figures, given figure has rational symmetry of order more than 1. So, rotational symmetry is 4.

(b) Given figure:



Let's rotate the given figure:

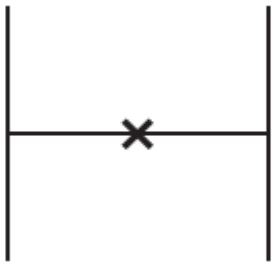


From above figures, given figure has rational symmetry of order more than 1. So, rotational symmetry is 3.

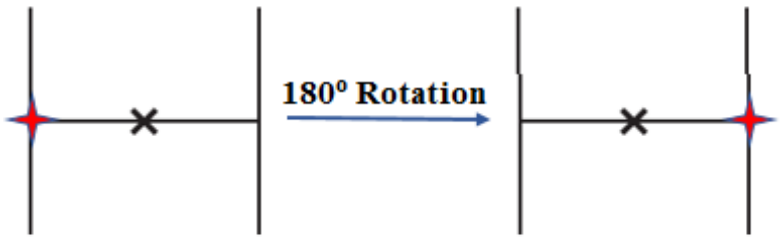
(c) Given figure:

From above figures, given figure has rational symmetry of order 1. So, rotational symmetry is 1.

(d) Given Figure:



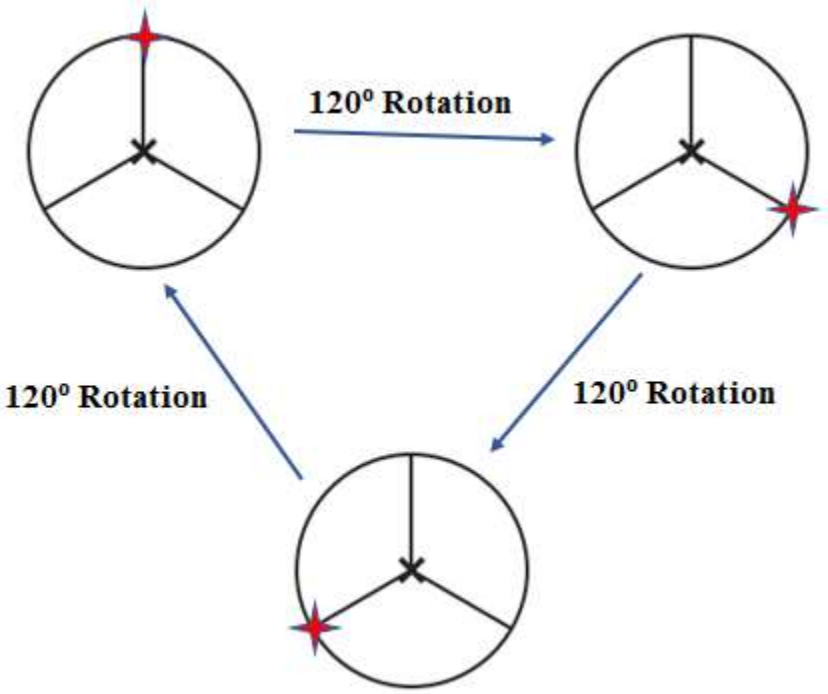
Let's rotate the given figure:



From above figures, given figure has rational symmetry of order more than 1. So, rotational symmetry is 2.

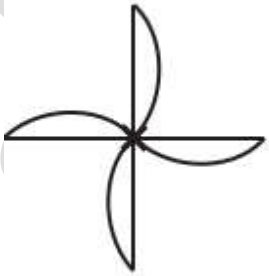
(e) Given figure:

Let's rotate the given figure:

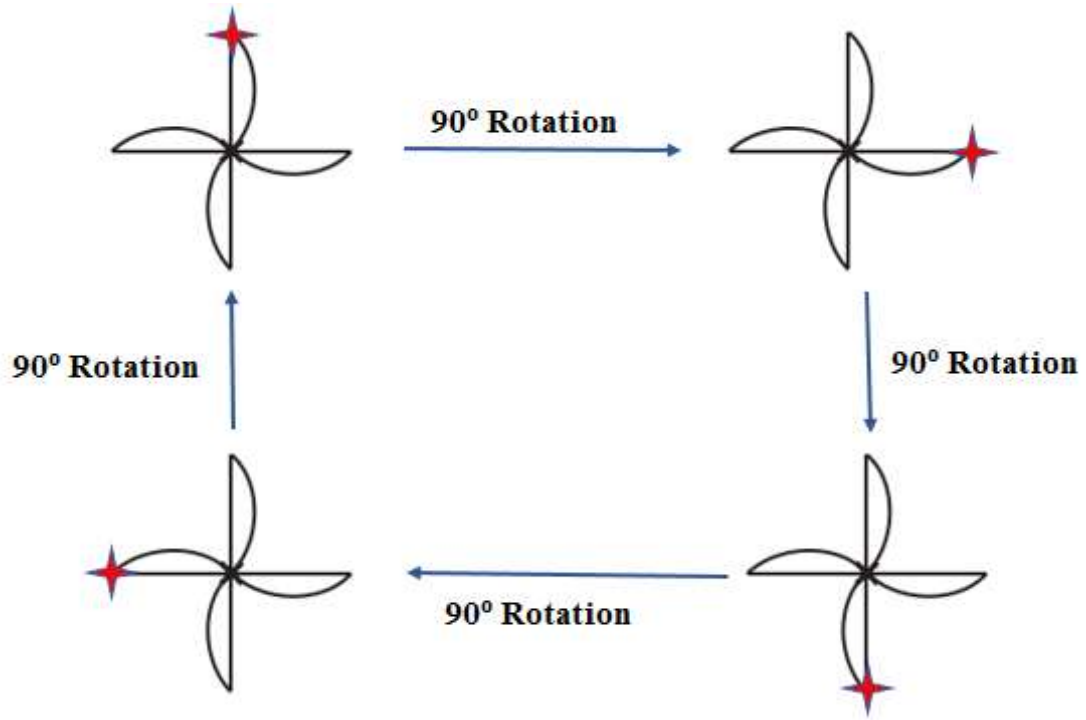


From above figures, given figure has rational symmetry of order more than 1. So, rotational symmetry is 3.

(f) Given Figure:

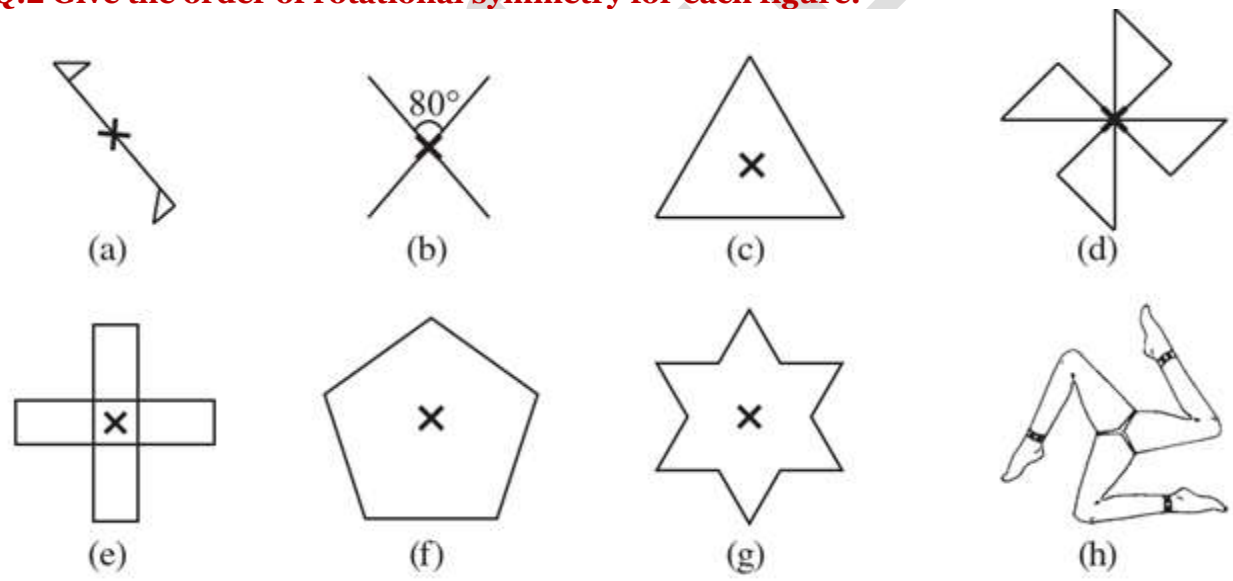


Let's rotate the given figure:



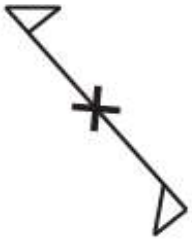
From above figures, given figure has rational symmetry of order more than 1. So, rotational symmetry is 4. Thus, from above observation, all the figures (a), (b), (d), (e) and (f) have rotational symmetry of order more than 1.

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

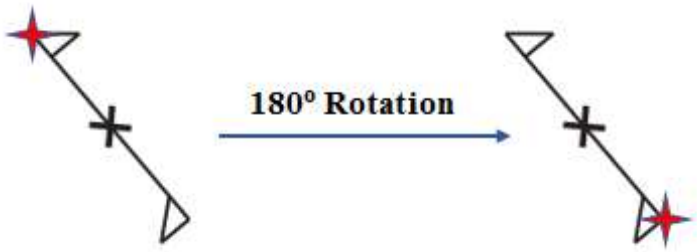


Sol:

(a) Given figure:

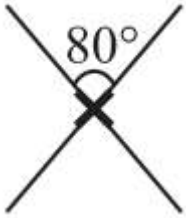


Let's rotate the given figure:

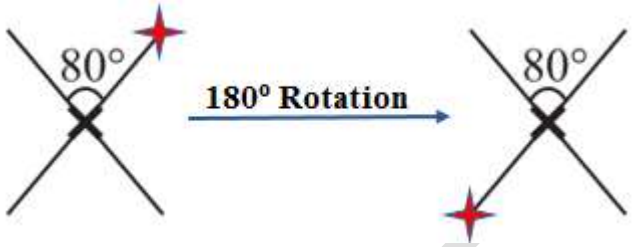


Order of rotational symmetry is 2.

(b) Given figure:

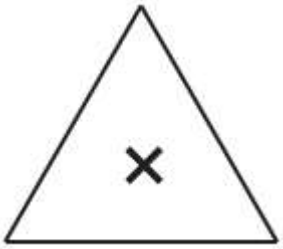


Let's rotate the given figure:

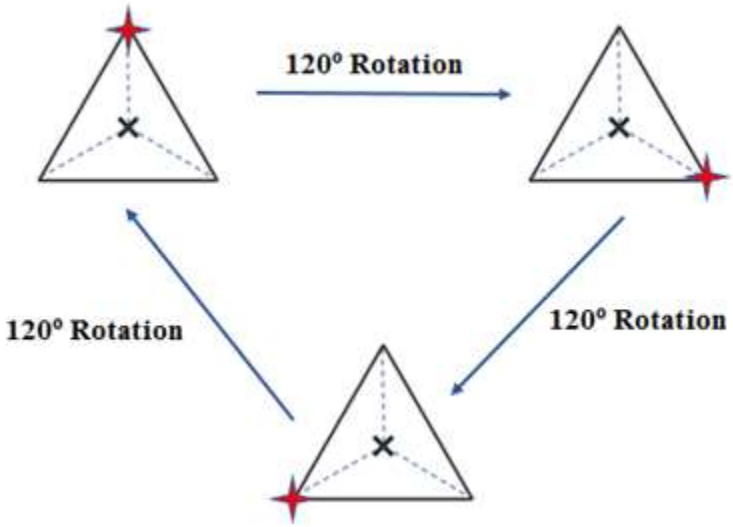


Order of rotational symmetry is 2.

(c) Given figure:

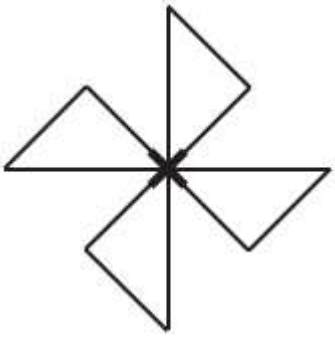


Let's rotate the given figure:

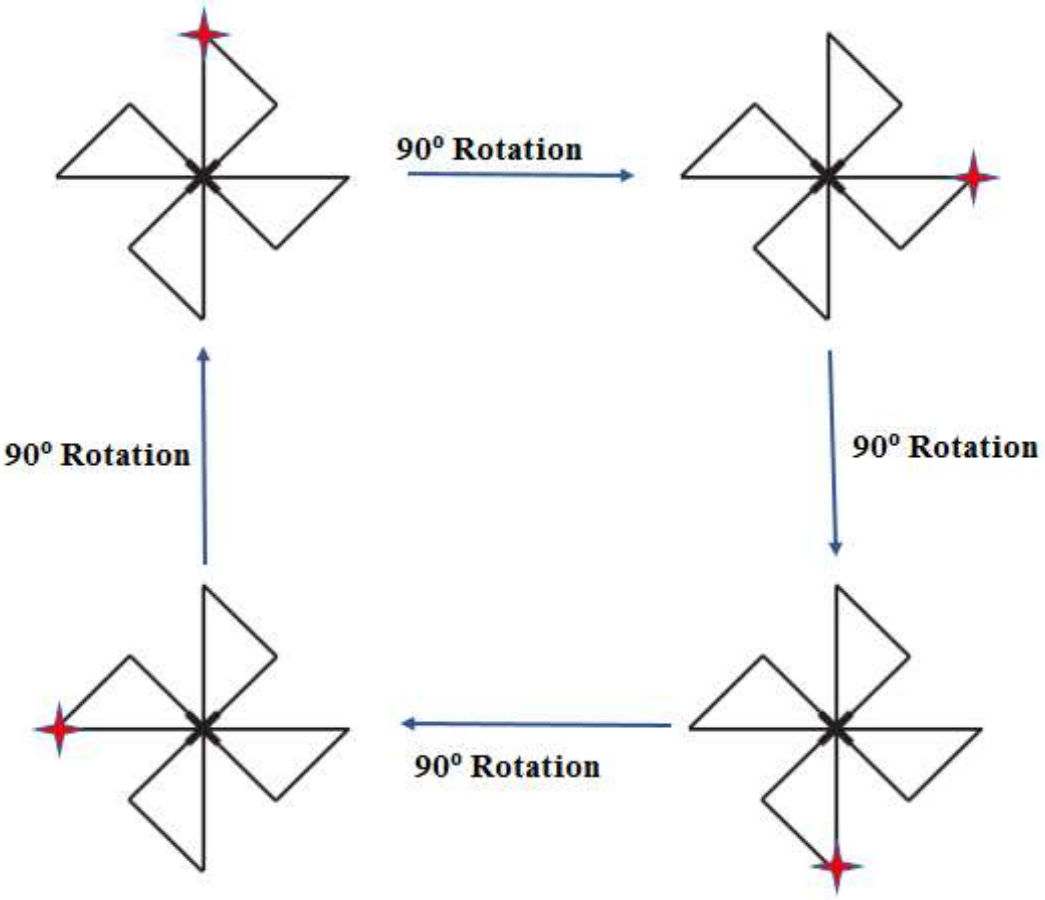


Order of rotational symmetry is 3.

(d) Given figure:

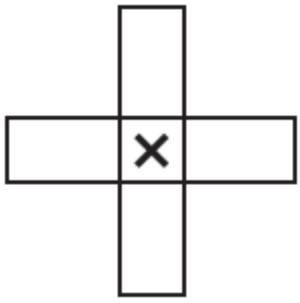


Let's rotate the given figure:

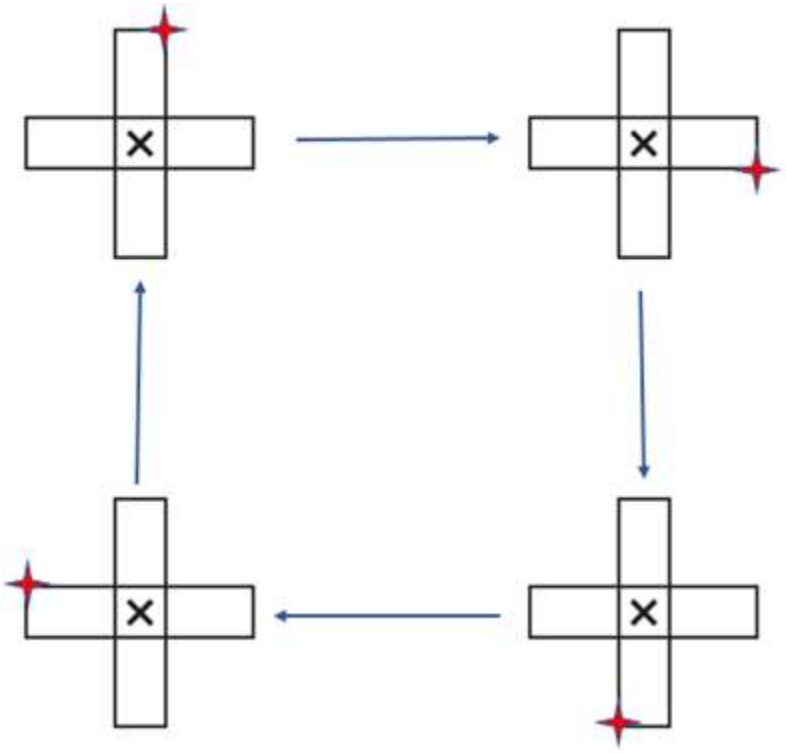


Order of rotational symmetry is 4.

(e) Given figure:

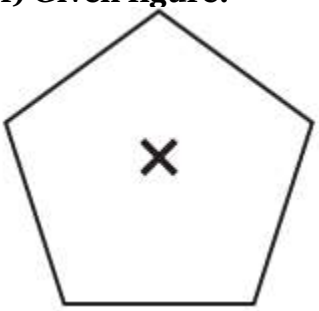


Let's rotate the given figure:

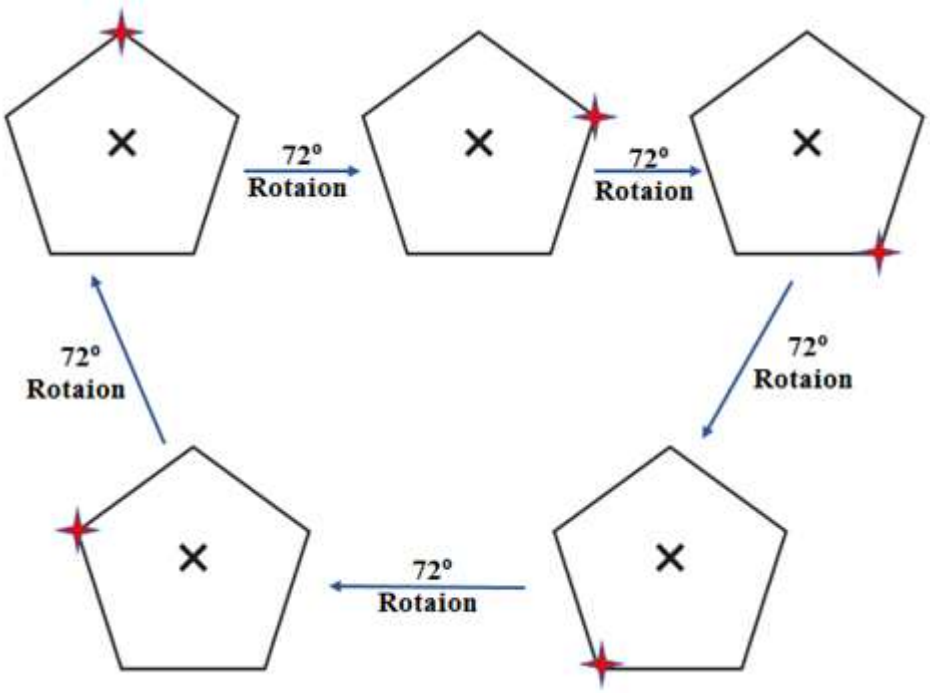


Order of rotational symmetry is 4.

(f) Given figure:



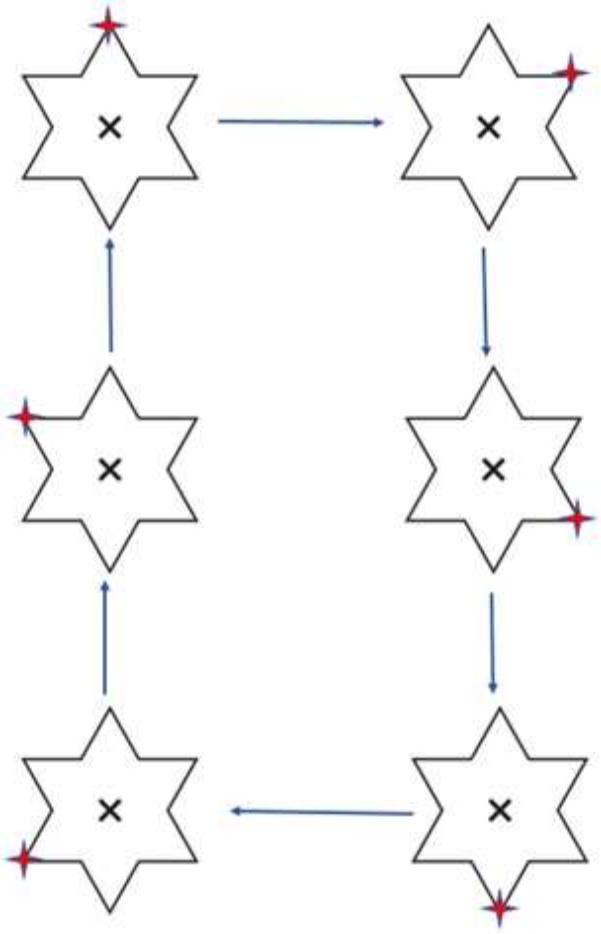
Let's rotate the given figure:



Order of rotational symmetry is 5.

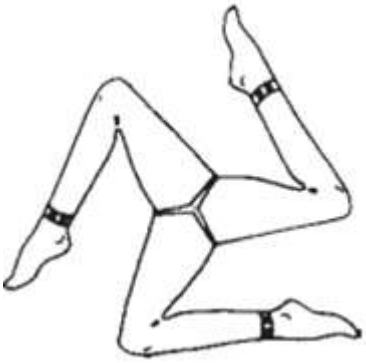
(g) Given figure:

Let's rotate the given figure:

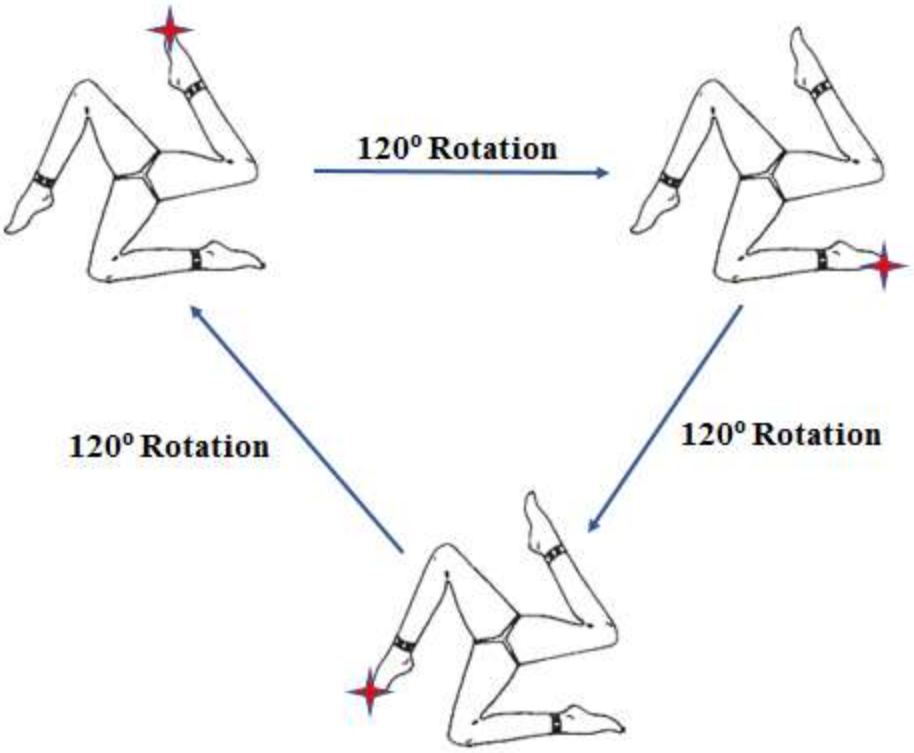


Order of rotational symmetry is 6.

(h) Given figure:



Let's rotate the given figure:



Order of rotational symmetry is 3.