

**INTERNATIONAL INDIAN SCHOOL**  
**BURAI DAH**

Worksheet For The Academic Year 2025-26

**CLASS: VI    SUBJECT: Mathematics    DATE: 11/01/2026**

**LESSON-9   Symmetry**

- 1) The line that cuts a figure into two equal parts that exactly overlaps each other when folded along that line is called line of symmetry.
- 2) A figure that has line or lines of symmetry will have reflection symmetry.
- 3) If a figure looks exactly the same as the original figure when it is rotated once about its centre is said to have rotational symmetry.
- 4) The number of times a figure looks same as the original figure while rotated once about its centre is called order of rotational symmetry.
- 5) When a figure is rotated , the smallest angle at which it looks exactly like the original figure is called angle of rotational symmetry.
- 6) The total angle covered by a figure in one complete turn is 360°.
- 7) The number of lines of symmetry a:
  - (i) rectangle has is 2    (ii) square has is 4    (iii) circle has is infinite
  - (iv) regular pentagon has is 5    (v) regular hexagon has is 6
  - (vi) regular octagon has is 8    (vii) equilateral triangle has is 3
  - (viii) parallelogram has is 0    (ix) a scalene triangle has is 0
  - (x) an isosceles triangle has is 1 .
- 8) Find the number of lines of symmetry in each of the following shapes.



(i)



(ii)



(iii)



(iv)

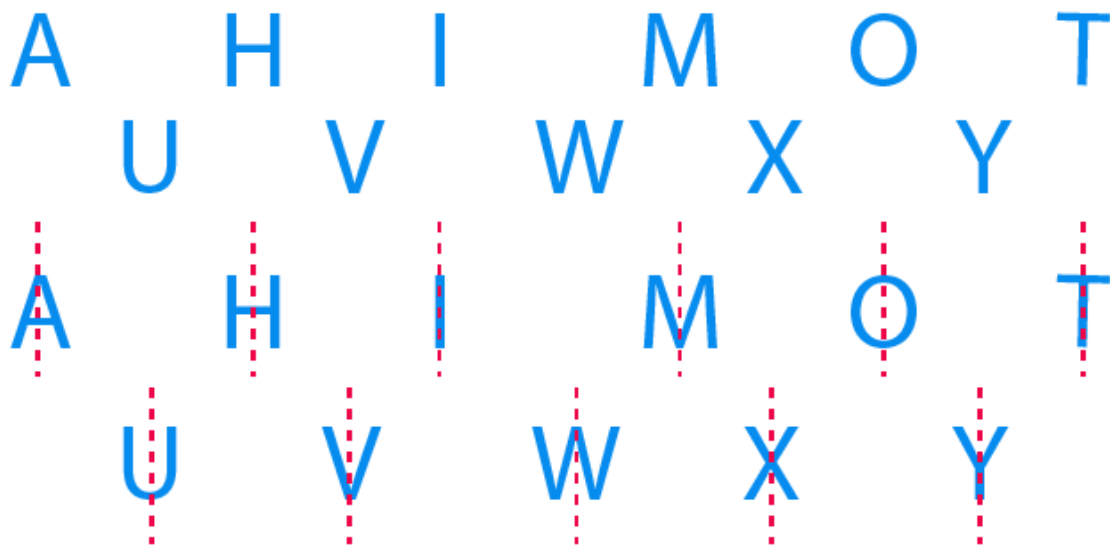


(v)

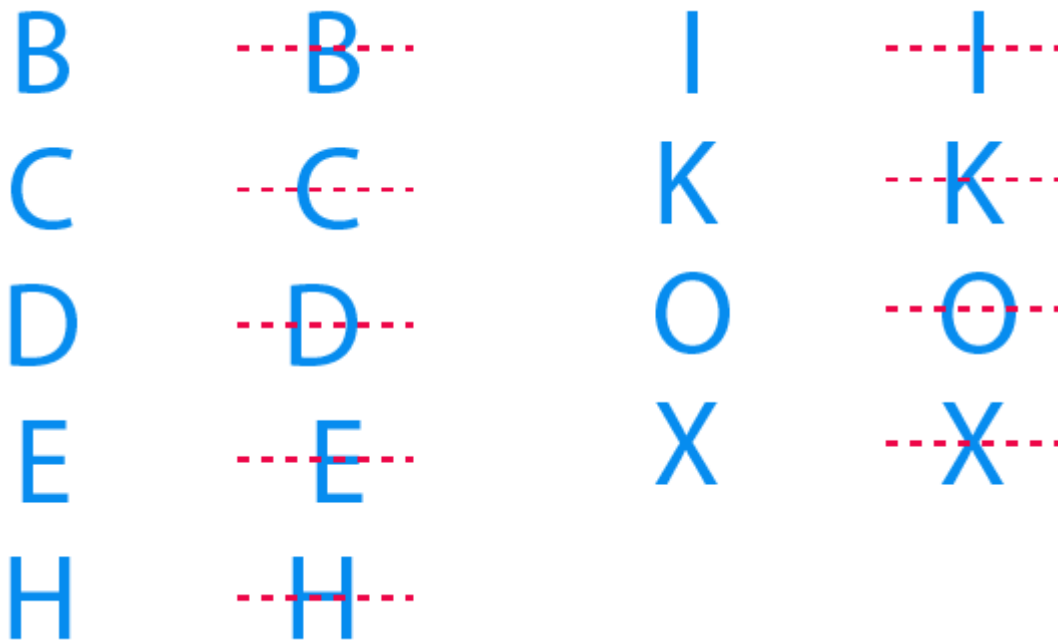
9) Consider the English alphabets A to Z. List among them the letters which have:

- (i) vertical line of symmetry.
- (ii) horizontal lines of symmetry.
- (iii) vertical and horizontal lines of symmetry.
- (iv) no line of symmetry.

Ans: Vertical line of symmetry.



(ii) Horizontal lines of symmetry.



(iii) Vertical and horizontal lines of symmetry.



(iv) No line of symmetry.

F, G, J, L, N, P, Q, R, S, Z

10) The shape of a circle remains the same when rotated by any angle.

11) A figure looks exactly the same when it is rotated by an angle about a fixed point, is said to have angle of symmetry.

12) A figure that has an angle of symmetry between 0 and 360 degrees is said to have rotational symmetry.




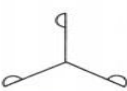
13) The centre of rotation is the point around which a figure is rotated in rotational symmetry.

14) M and W are the capital letters of English alphabets that have one line of symmetry but they interchange to each other when rotated through  $180^\circ$ .

15) How many line of symmetry does this butterfly have? (Ans: 1)



16) Match the following figures with their order of rotational symmetry.

Column A	Column B
(i) 	(a) 5
(ii) 	(b) 3
(iii) 	(c) 4
(iv) 	(d) 2

17) The number of lines of symmetry of a kite is 1.



**Note:** Angle of rotational symmetry =  $\frac{360}{\text{order of rotational symmetry}}$

18) What is the smallest angle of symmetry of

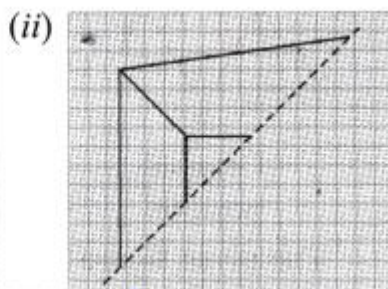
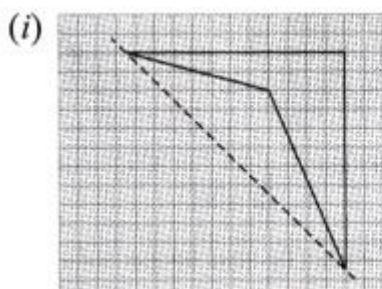
(i) an equilateral triangle,

(ii) a square?

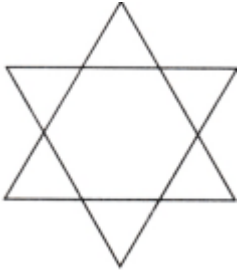
Ans: (i)  $120^\circ$

(ii)  $90^\circ$

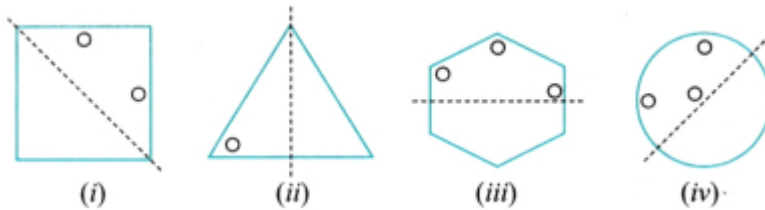
19) Complete each of the following figures such that the dotted line is the line of symmetry.



20) State whether the figure shows rotational symmetry. If yes, then what is the order of rotational symmetry? (Ans: Yes , 6)



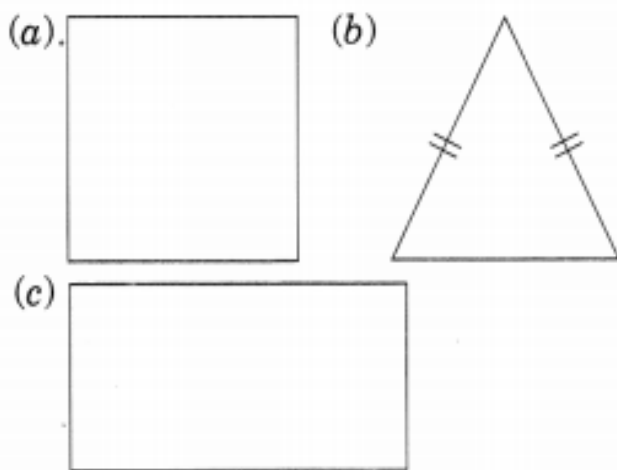
21) Given the line (s) of symmetry, find the other hole (s):



22) Write 4 English letters which have vertical lines of symmetry.

23) Write 5 such English letters which have horizontal line of symmetry.

24) How many symmetrical lines do they have? (Ans: 4, 1, 2)

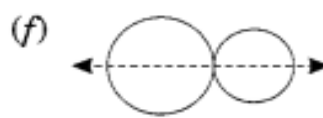
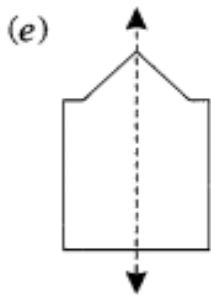
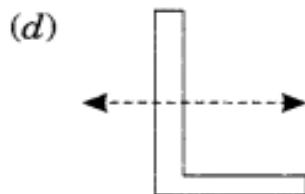
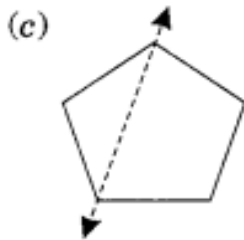
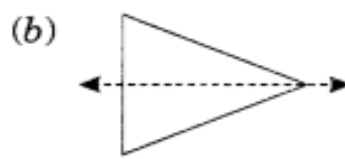
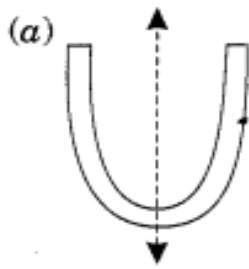


25) How many lines of symmetry and angles of symmetry does Ashoka Chakra have?

( Ans: 12 , Angle of symmetry =  $360 \div 12 = 30^\circ$  and

Angles of symmetry –  $30^\circ$  ,  $60^\circ$  ,  $90^\circ$  ,  $120^\circ$  ,  $150^\circ$  ,  $180^\circ$  ,  $210^\circ$  ,  $240^\circ$  ,  $270^\circ$  ,  $300^\circ$  ,  $330^\circ$  ,  $360^\circ$  .( add 30 with each till you get  $360^\circ$  )

26) Find in which of the following, the dotted line is a line of symmetry.



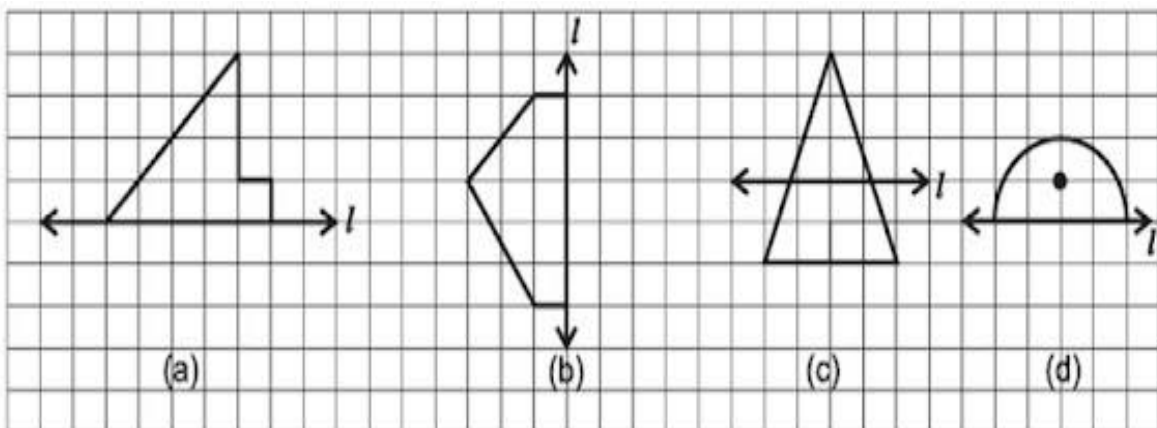
(Ans: a ,b ,e ,f)

27) Find the order of rotational symmetry of a square and write all its angle of rotation.

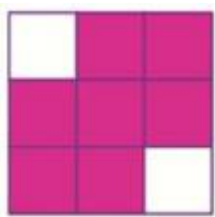
Ans: A square has rotational symmetry of order 4 because it can be rotated by  $90^\circ$ ,  $180^\circ$ ,  $270^\circ$ , and  $360^\circ$  without changing its appearance.

28) The smallest angle of symmetry in the Ashoka chakra is  $30^\circ$ .

29) In the following figures,  $l$  is the line of symmetry. Complete the diagram to make it symmetric.

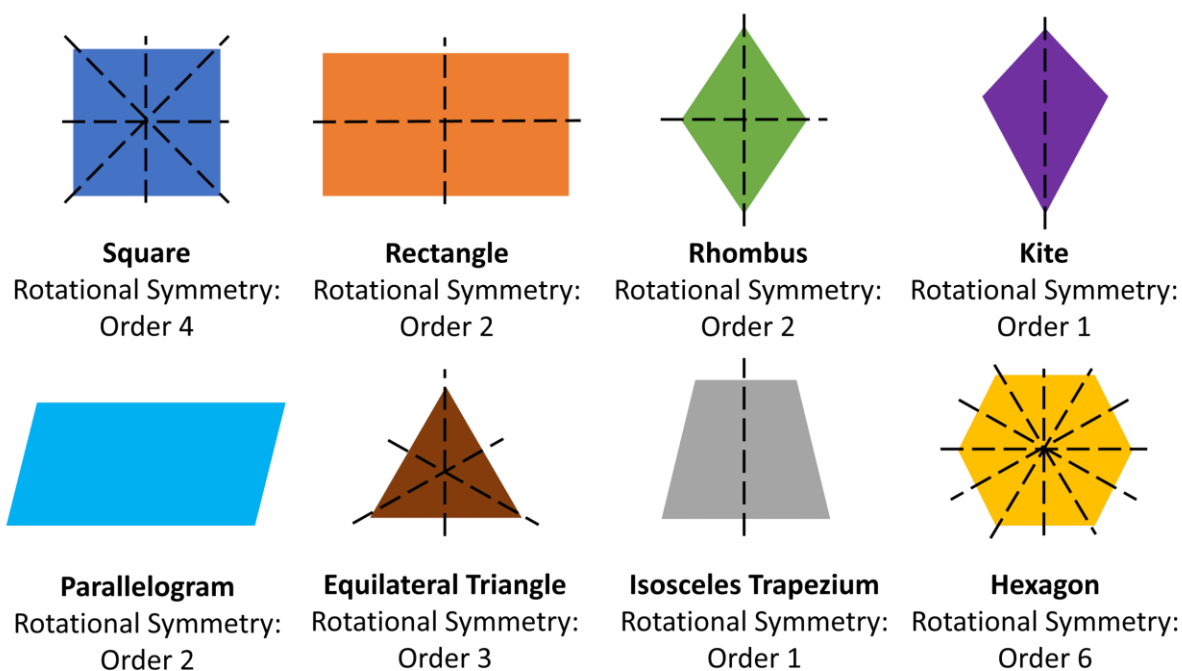


30) Draw the line of symmetry?



31) The order of **rotational symmetry** of common shapes is shown below:

(Lines of symmetry is drawn)



32)

Figure	Order of Rotational Symmetry	Angle of Rotation Symmetry
Diamond	2	180°
Square	4	90°
Circle	Infinite	Any angle
Rectangle	2	180°
Hexagon	6	60°

33) If the smallest angle of rotational symmetry is  $45^\circ$ , the order of rotational symmetry is \_\_\_\_\_. (Ans:  $360 \div 45 = 8$ )

34) If the order of rotational symmetry of a figure is 9 , the angle of rotational symmetry is \_\_\_\_\_. (Ans:  $360 \div 9 = 40^\circ$ )

35) If  $60^\circ$  is the smallest angle of rotational symmetry of a figure , find all the remaining angles of symmetry.

Ans: smallest angle =  $60^\circ$

Remaining angles:  $60^\circ \times 2 = 120^\circ$

$60^\circ \times 3 = 180^\circ$

$60^\circ \times 4 = 240^\circ$

$60^\circ \times 5 = 300^\circ$

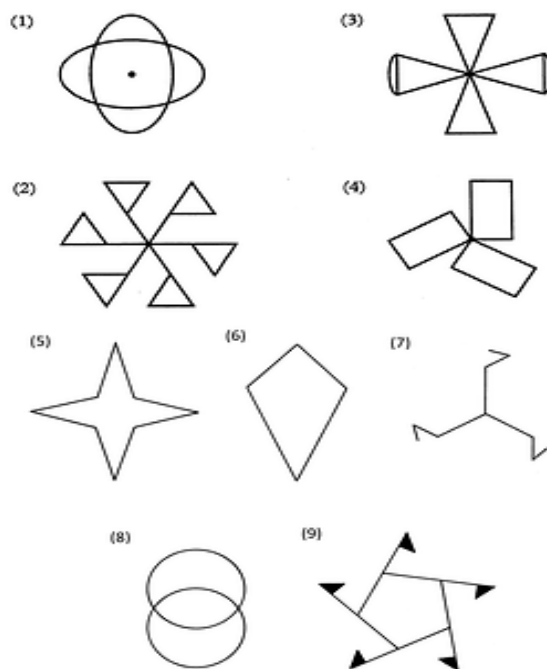
$60^\circ \times 6 = 360^\circ$

36) A parallelogram has 0 lines of symmetry.

37) Name a triangle with (i) one line of symmetry (ii) no line of symmetry  
(iii) 3 lines of symmetry

Ans: (i) isosceles triangle (ii) scalene triangle (iii) equilateral triangle

38) Write the order of rotational symmetry of the following:



Ans: (1) 4 (2) 6 (3) 2 (4) 3 (5) 4 (6) 1 (7) 3 (8) 2 (9) 5