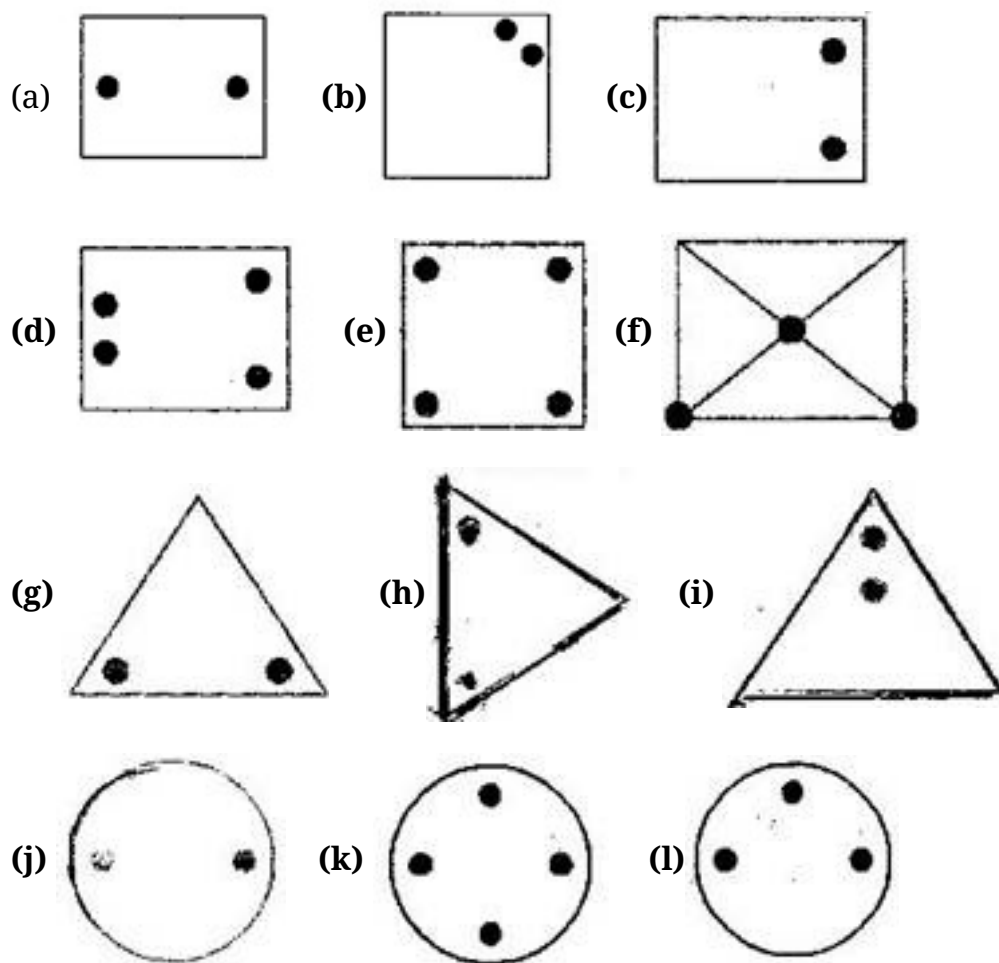
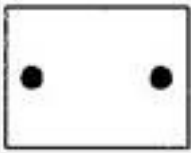
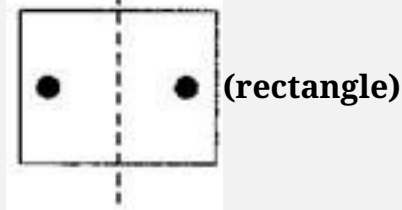



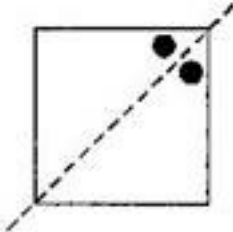
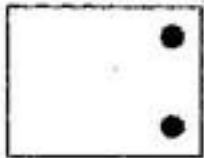
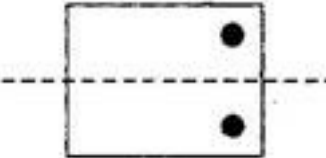
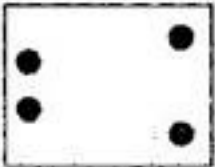
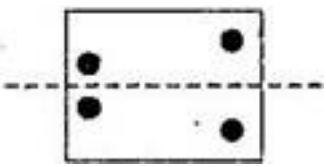

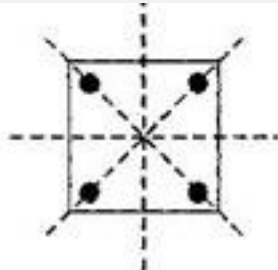
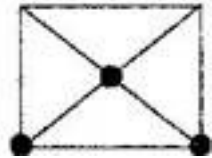
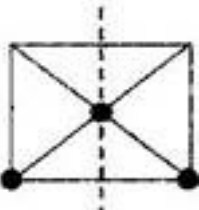
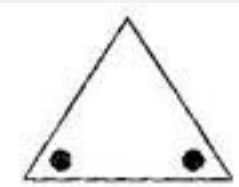
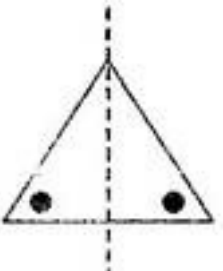
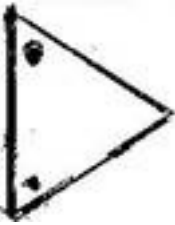
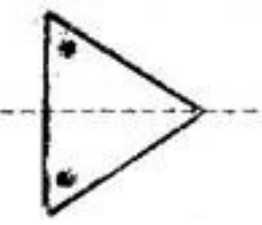
**CBSE Class –VII Mathematics**  
**NCERT Solutions**  
**Chapter 14 Symmetry (Ex. 14.1)**

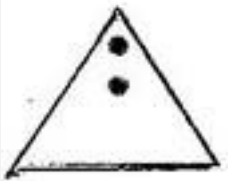
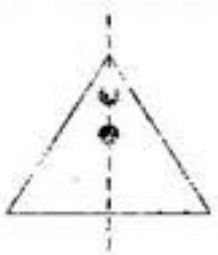

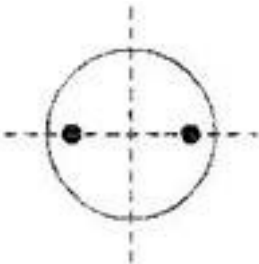
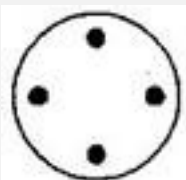
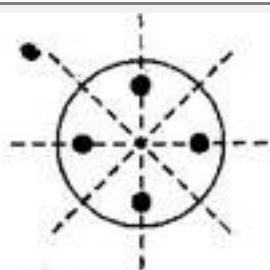


**Question 1.** Copy the figures with punched holes and find the axes of symmetry for the following:




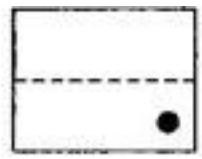
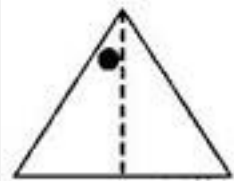
**Answer: Sol.**

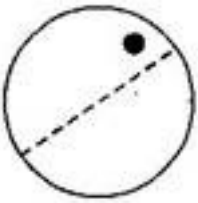
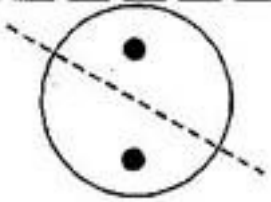
S.No.	Punched holed figures	The axes of symmetry
(a)		 (rectangle)

(b)		 (square)
(c)		
(d)		
(e)		 (square)
(f)		
(g)		
(h)		
(i)		



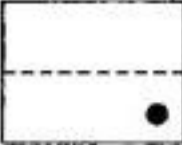
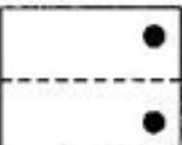
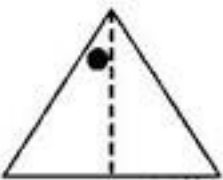
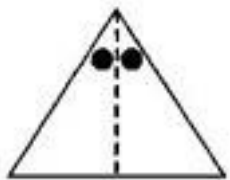
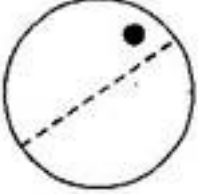
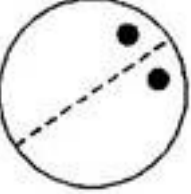
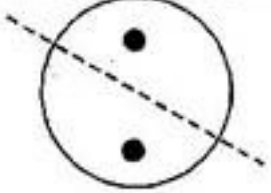
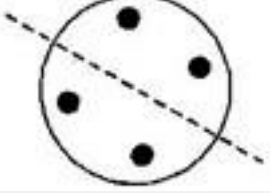
		
(j)		
(k)		
(l)		

**Question 2. Given the line(s) of symmetry, find the other hole(s):**

S.No.	Line(s) of symmetry	Other holes on figures
(a)		
(b)		
(c)		

(d)		
(e)		

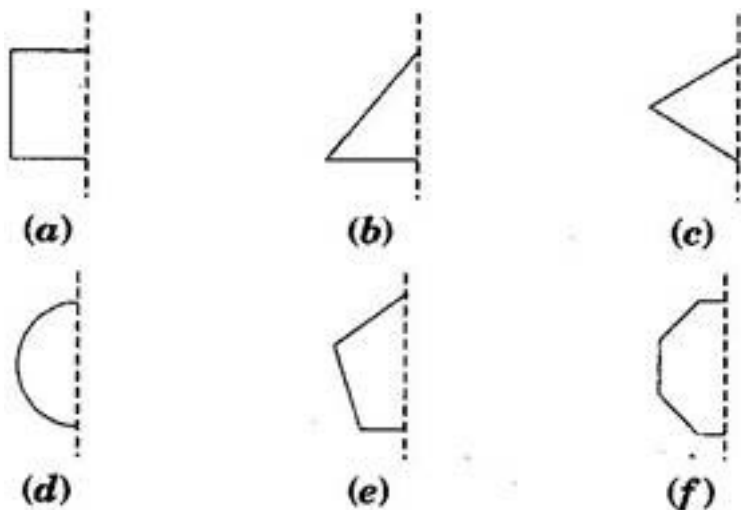
Ans.

S.No.	Line(s) of symmetry	Other holes on figures
(a)		
(b)		
(c)		
(d)		
(e)		


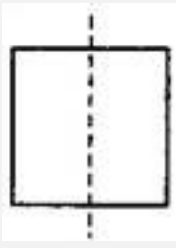
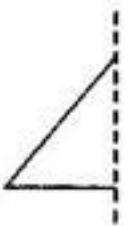
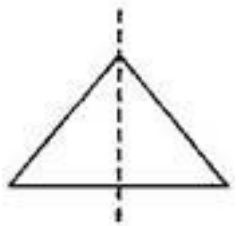

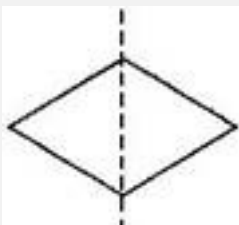


**Question 3.** In the following figures, the mirror line (i.e., the line of symmetry) is given as a dotted line. Complete each figure performing reflection in the dotted (mirror) line. (You might perhaps place a mirror along the dotted line and look into the mirror for

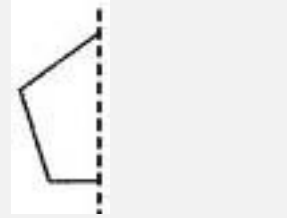
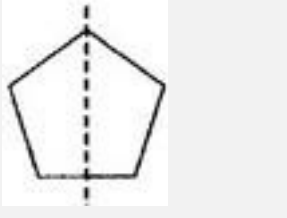
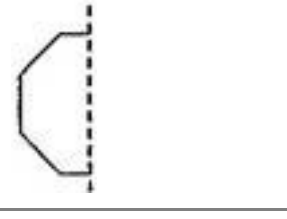
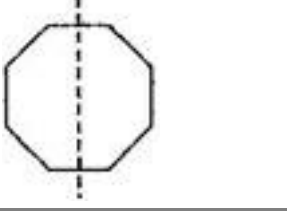
the image).

Are you able to recall the name of the figure you complete?

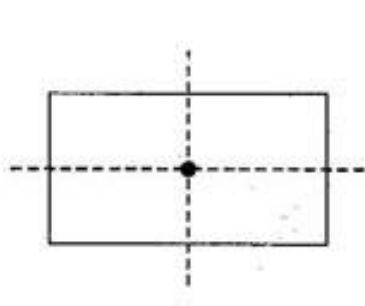


Answer: Sol.

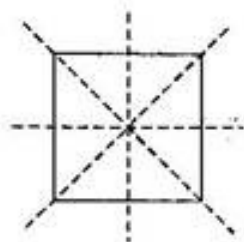
S.No.	Question figures	Complete figures	Names of the figure
(a)			Square
(b)			Triangle
(c)			Rhombus
(d)			Circle

(e)			Pentagon
(f)			Octagon

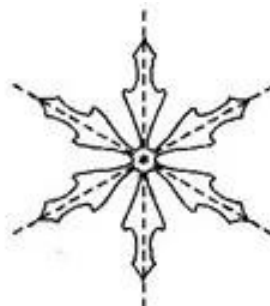
**Question 4.** The following figures have more than one line of symmetry. Such figures are said to have multiple lines of symmetry:



(a)



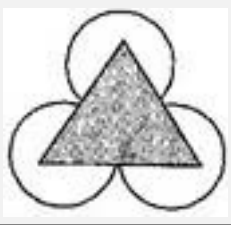
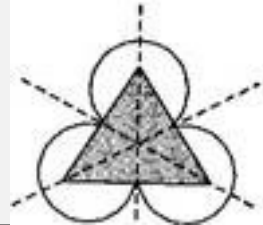
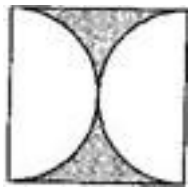
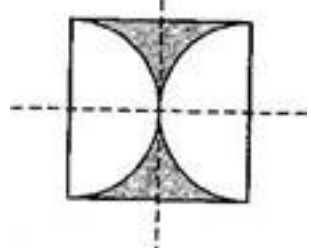
(b)

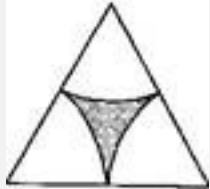
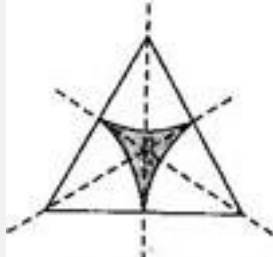

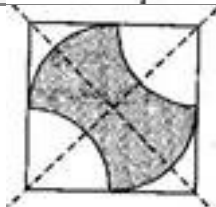
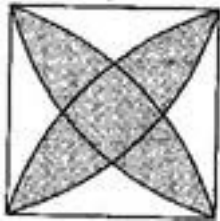
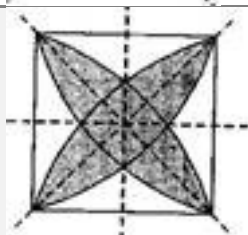
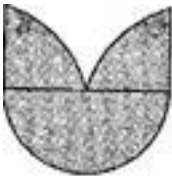
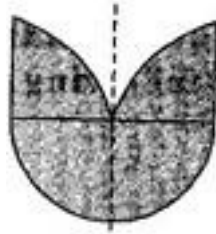
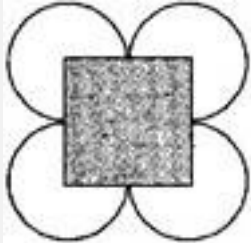
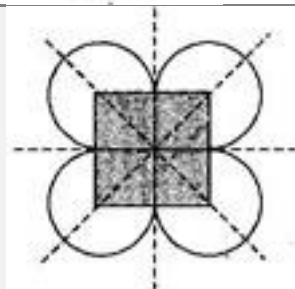
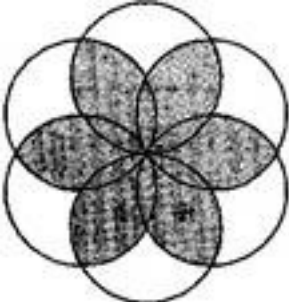
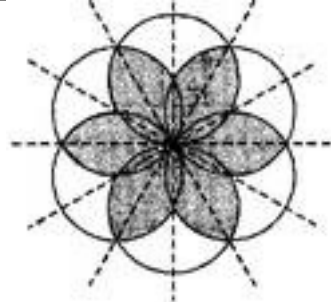


(c)

**Identify multiple lines of symmetry, if any, in each of the following figures:**

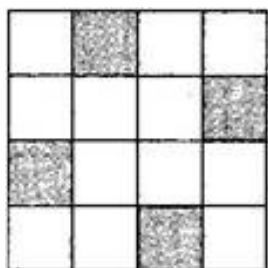
**Answer:**

S.No.	Problem Figures	Lines of symmetry
(a)		
(b)		

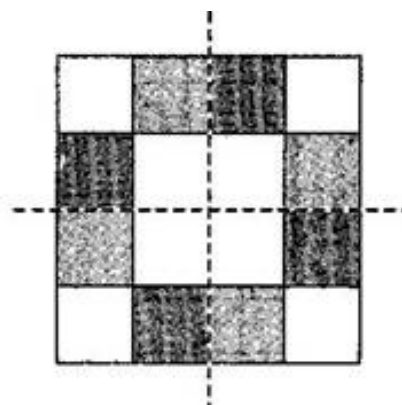
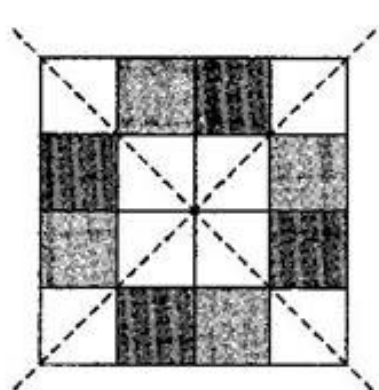
(c)		
(d)		
(e)		
(f)		
(g)		
(h)		

Question 5. Copy the figure given here:



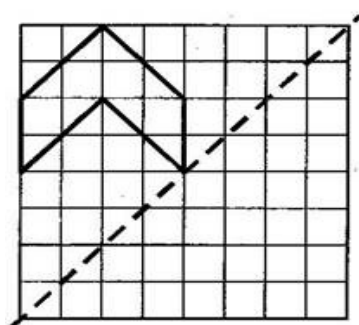


Answer figures are:

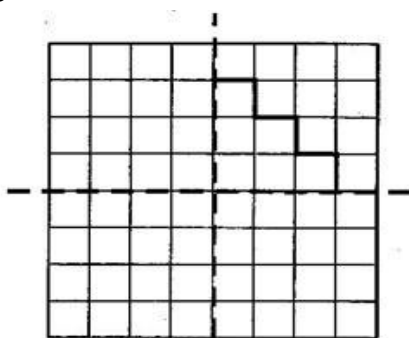


Yes, there is more than one way.

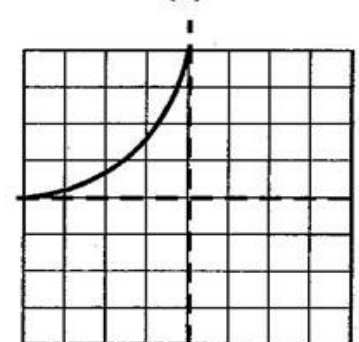
Yes, this figure will be symmetric about both the diagonals.



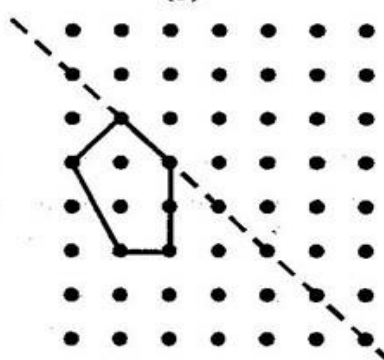
(a)



(b)



(c)



(d)

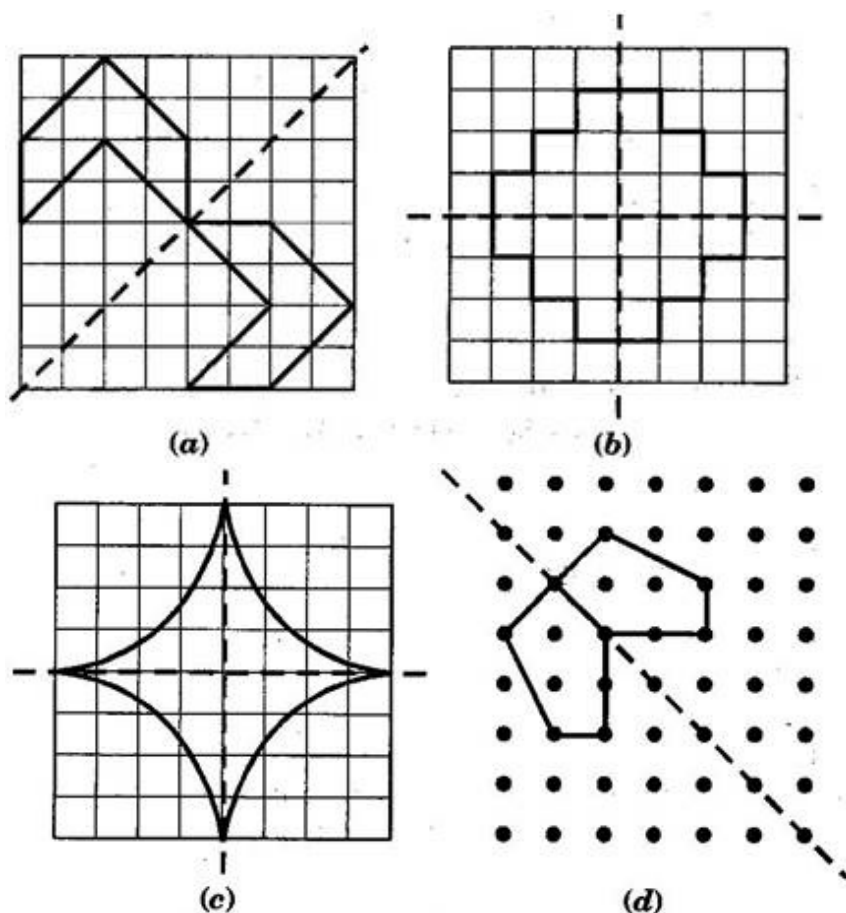
Take any one diagonal as a line of symmetry and shade a few more squares to make the figure symmetric about a diagonal. Is there more than one way to do that? Will the figure be symmetric about both the diagonals? Answer: Question 6. Copy the diagram



and complete each shape to be symmetric about the mirror line(s):

**Question 6.** Copy the diagram and complete each shape to be symmetric about the mirror line (s) :

**Answer:**

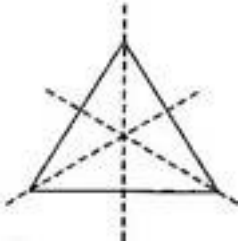
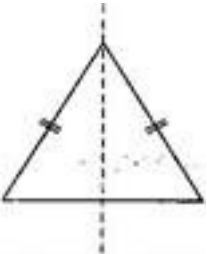
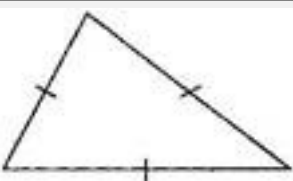
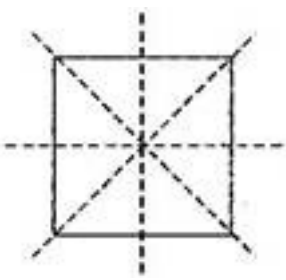
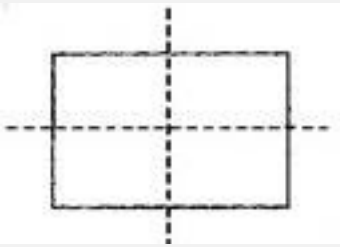
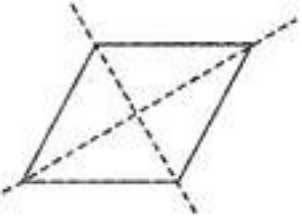

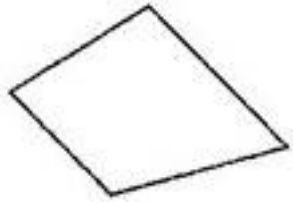


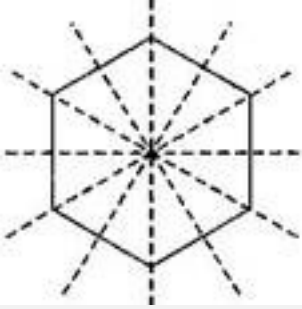
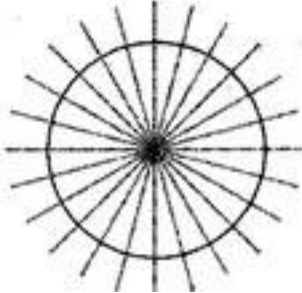
**Question 7.** State the number of lines of symmetry for the following figures:

- (a) An equilateral triangle (b) An isosceles triangle (c) A scalene triangle  
 (d) A square (e) A rectangle (f) A rhombus  
 (g) A parallelogram (h) A quadrilateral (i) A regular hexagon  
 (j) A circle

**Answer:**

S.No.	Figure's name	Diagram with symmetry	Number of lines

(a)	Equilateral triangle		3
(b)	Isosceles triangle		1
(c)	Scalene triangle		0
(d)	Square		4
(e)	Rectangle		2
(f)	Rhombus		2
(g)	Parallelogram		0
(h)	Quadrilateral		0

(i)	Regular Hexagon		6
(j)	Circle		Infinite


**Question 8. What letters of the English alphabet have reflectional symmetry (i.e., symmetry related to mirror reflection) about:**

1. a vertical mirror
2. a horizontal mirror
3. both horizontal and vertical mirrors

**Answer: (a) Vertical mirror – A, H, I, M, O, T, U, V, W, X and Y mirror mirror**

A		A	U		U
H		H	V		V
I		I	W		W
M		M	X		X
O		O	Y		Y
T		T			

**(b) Horizontal mirror – B, C, D, E, H, I, O and X**

	B	C	D	E	H	I	O	X
mirror								
	B	C	D	E	H	I	O	X

**(c) Both horizontal and vertical mirror – H, I, O and X**

**Question 9. Give three examples of shapes with no line of symmetry.**

**Answer: The three examples are:**

1. Quadrilateral
2. Scalene triangle
3. Parallelogram

**Question 10. What other name can you give to the line of symmetry of:**

1. an isosceles triangle?
2. a circle?

**Answer: (a) The line of symmetry of an isosceles triangle is median or altitude.**

**(b) The line of symmetry of a circle is diameter.**