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(Chapter – 14) (Symmetry) (Class – VII)

Exercise 14.1

Question 1:

Copy the figures with punched holes and find the axes of symmetry for the following:









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Question 2:

Express the following in exponential form:



Answer 2:



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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 3:







Question 4:

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



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



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Question 5:

Copy the figure given here:

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 5:

Answer figures are:



Yes, there is more than one way.

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



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Question 6:

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



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Question 7:

State the number of lines of symmetry for the following figures: (b) An isosceles triangle

- (a) An equilateral triangle
- (d) A square

- (c) A scalene triangle

- (e) A rectangle
- (f) A rhombus

- (g) A parallelogram

- (h) A quadrilateral
- (i) A regular hexagon

(j) A circle **Answer 7:**

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



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Question 8:

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

(a) a vertical mirror

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- (b) a horizontal mirror
- (c) both horizontal and vertical mirrors

Answer 8:

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

	mirror				mirror					
	A	A				U	U			
	H	H		2		v	v			
	Ι	Ι				W	W			
	Μ	М				Х	Х			
	0	0				Y	Y			
	Т	Т								
(b) Horizontal mirror – B, C, D, E, H, I, O and X										
	В	С	D	\mathbf{E}	H	I	0	Х		
mirror	muninin	ininininininininininininininininininin	mmmm	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	mmmmi	mmmm		
	В	С	D	E	H	Ι	0	Х		

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

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Question 9:

Give three examples of shapes with no line of symmetry.

Answer 9:

The three examples are:

- Quadrilateral
- Scalene triangle
- > Parallelogram

Question 10:

What other name can you give to the line of symmetry of:

- (a) an isosceles triangle?
- (b) a circle?

Answer 10:

- (a) The line of symmetry of an isosceles triangle is median or altitude.
- (b) The line of symmetry of a circle is diameter.





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