

Chapter 9: Symmetry and Practical Geometry

NCERT Exemplar · Class 6 · Maths

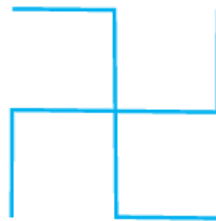
Questions

Question 1

In the following figures, the figure that is not symmetric with respect to any line is:



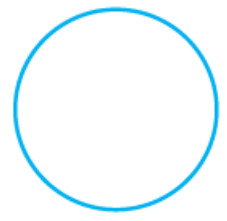
(i)



(ii)



(iii)



(iv)

(A) (i) (B) (ii) (C) (iii) (D) (iv)

Solution

Solution:-

(B) (ii)

A figure is said to have line symmetry if, by folding the figure along a line, the left and right parts of it coincide exactly. The line is called the line (or axis) of the symmetry of the figure.

Question 2

The number of lines of symmetry in a scalene triangle is

(A) 0 (B) 1 (C) 2 (D) 3

Solution

Solution:-

(A) 0

A scalene triangle is a triangle that has three unequal sides.

Therefore, there are no lines of symmetry in a scalene triangle.

Question 3

The number of lines of symmetry in a circle is

(A) 0 (B) 2 (C) 4 (D) more than 4

Solution

Solution:-

(D) more than 4

Question 4

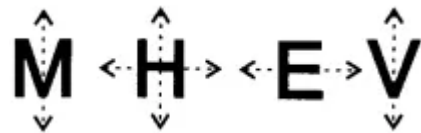
Which of the following letters does not have a vertical line of symmetry?

(A) M (B) H (C) E (D) V

Solution

Solution:-

(C) E



Question 5

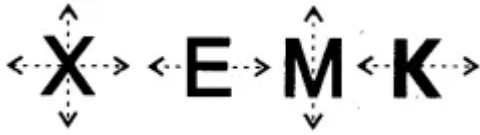
Which of the following letters have both horizontal and vertical lines of symmetry?

(A) X (B) E (C) M (D) K

Solution

Solution:-

(A) X



Question 6

Which of the following letters does not have any line of symmetry?

(A) M (B) S (C) K (D) H

Solution

Solution:-

(B) S



Question 7

Which of the following letters has only one line of symmetry?

(A) H (B) X (C) Z (D) T

Solution

Solution:-

(D) T



Question 8

The instrument to measure an angle is a

(A) Ruler (B) Protractor (C) Divider (D) Compasses

Solution

Solution:-

(B) Protractor

An instrument for measuring angles, typically in the form of a flat semicircle marked with degrees along the curved edge.

Question 9

The instrument to draw a circle is

(A) Ruler (B) Protractor (C) Divider (D) Compasses

Solution

Solution:-

(D) Compasses

The instrument to draw a circle is a compass.

Question 10

Number of set squares in the geometry box is

(A) 0 (B) 1 (C) 2 (D) 3

Solution

Solution:-

(C) 2

Question 11

The number of lines of symmetry in a ruler is

(A) 0 (B) 1 (C) 2 (D) 4

Solution

Solution:-

(C) 2

We know that the ruler has the shape of a rectangle,

So, the number of lines of symmetry in a ruler is 2.

Question 12

The number of lines of symmetry in a divider is

(A) 0 (B) 1 (C) 2 (D) 3

Solution

Solution:-

(B) 1

The number of lines of symmetry in a divider is 1.

Question 13

The number of lines of symmetry in compasses is

(A) 0 (B) 1 (C) 2 (D) 3

Solution

Solution:-

(A) 0



Therefore, there are no lines of symmetry in a compass.

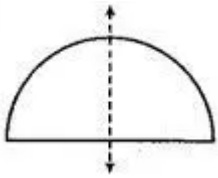
Question 14

The number of lines of symmetry in a protractor is

(A) 0 (B) 1 (C) 2 (D) more than 2

Solution**Solution:-**

(B) 1



Therefore, there is only one line of symmetry in a protractor.

Question 15

The number of lines of symmetry in a $45^\circ - 45^\circ - 90^\circ$ set square is

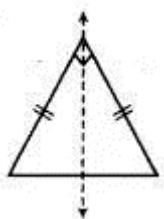
(A) 0 (B) 1 (C) 2 (D) 3

Solution**Solution:-**

(B) 1

From the question, it is given that the measurement of an isosceles triangle.

So, the number of lines of symmetry in the given set-square is 1.

**Question 16**

The number of lines of symmetry in a $30^\circ - 60^\circ - 90^\circ$ set square is

(A) 0 (B) 1 (C) 2 (D) 3

Solution**Solution:-**

(A) 0

From the question, it is given that measurement of a scalene triangle.

So, the number of lines of symmetry in the given set-square is 0.

Question 17

The instrument in the geometry box having the shape of a triangle is called a

(A) Protractor (B) Compasses

(C) Divider (D) Set-square

Solution

Solution:-

(D) Set-square

In questions 18 to 42, fill in the blanks to make the statements true.

Question 18

The distance of the image of a point (or an object) from the line of symmetry (mirror) is _____ as that of the point (object) from the line (mirror).

Solution

Solution:-

The distance of the image of a point (or an object) from the line of symmetry (mirror) is the same as that of the point (object) from the line (mirror).

Question 19

The number of lines of symmetry in a picture of the Taj Mahal is _____.

Solution

Solution:-

The number of lines of symmetry in a picture of the Taj Mahal is one.

Question 20

The number of lines of symmetry in a rectangle and a rhombus are _____ (equal/unequal).

Solution**Solution:-**

The number of lines of symmetry in a rectangle and a rhombus are equal.

Question 21

The number of lines of symmetry in a rectangle and a square are _____ (equal/unequal).

Solution**Solution:-**

The number of lines of symmetry in a rectangle and a square are unequal.

Question 22

If a line segment of length 5cm is reflected in a line of symmetry (mirror), then its reflection (image) is a _____ of length _____.

Solution**Solution:-**

If a line segment of length 5cm is reflected in a line of symmetry (mirror), then its reflection (image) is a line segment of length 5cm.

Question 23

If an angle of measure 80° is reflected in a line of symmetry, then the reflection is an _____ of measure _____.

Solution**Solution:-**

If an angle of measure 80° is reflected in a line of symmetry, then the reflection is an angle of measure 80° .

Question 24

The image of a point lying on a line l with respect to the line of symmetry l lies on _____.

Solution

Solution:-

The image of a point lying on a line l with respect to the line of symmetry l lies on line l .

Question 25

In Fig. 9.10, if B is the image of point A with respect to the line l and P is any point lying on l , then the lengths of line segments PA and PB are _____.

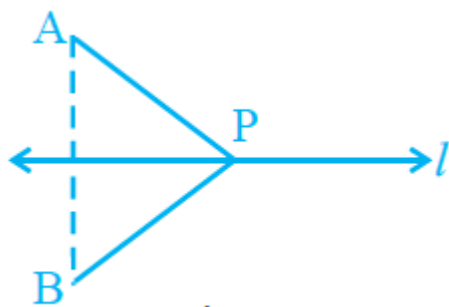


Fig. 9.10

Solution

Solution:-

In Fig. 9.10, if B is the image of point A with respect to line l and P is any point lying on l , then the lengths of line segments PA and PB are equal.

Question 26

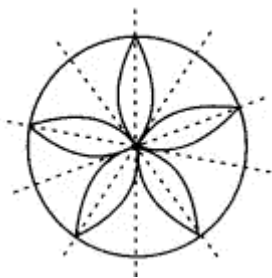
The number of lines of symmetry in Fig. 9.11 is _____.



Fig. 9.11

Solution**Solution:-**

The number of lines of symmetry in Fig. 9.11 is 5.

**Question 27**

The common properties in the two set-squares of a geometry box are that they have a _____ angle and they are of the shape of a _____.

Solution**Solution:-**

The common properties in the two set-squares of a geometry box are that they have a right angle and they are of the shape of a triangle.

Question 28

The digits having only two lines of symmetry are _____ and _____.

Solution**Solution:-**

The digits having only two lines of symmetry are 0 and 8.

Question 29

The digit having only one line of symmetry is _____.

Solution**Solution:-**

The digit having only one line of symmetry is 3.

Question 30

The number of digits having no line of symmetry is _____.

Solution**Solution:-**

The number of digits having no line of symmetry is 7.

The digits having no line of symmetry are 1, 2, 4, 5, 6, 7 and 9
