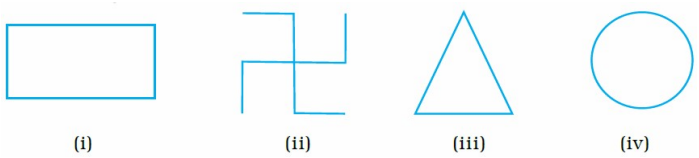
EXERCISE

In questions 1 to 17, out of the given four options, only one is correct. Write the correct answer.

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



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

2. The number of lines of symmetry in a scalene triangle is
(A) 0 (B) 1 (C) 2 (D) 3

3. The number of lines of symmetry in a circle is
(A) 0 (B) 2 (C) 4 (D) more than 4

4. Which of the following letters does not have the vertical line of symmetry?
(A) M (B) H (C) E (D) V

5. Which of the following letters have both horizontal and vertical lines of symmetry?
(A) X (B) E (C) M (D) K

6. Which of the following letters does not have any line of symmetry?
(A) M (B) S (C) K (D) H

7. Which of the following letters has only one line of symmetry?
(A) H (B) X (C) Z (D) T

8. The instrument to measure an angle is a
(A) Ruler (B) Protractor (C) Divider (D) Compasses

9. The instrument to draw a circle is
(A) Ruler (B) Protractor (C) Divider (D) Compasses

10. Number of set squares in the geometry box is
(A) 0 (B) 1 (C) 2 (D) 3

11. The number of lines of symmetry in a ruler is
(A) 0 (B) 1 (C) 2 (D) 4

12. The number of lines of symmetry in a divider is
(A) 0 (B) 1 (C) 2 (D) 3

13. The number of lines of symmetry in compasses is
(A) 0 (B) 1 (C) 2 (D) 3

14. The number of lines of symmetry in a protractor is
(A) 0 (B) 1 (C) 2 (D) more than 23

15. The number of lines of symmetry in a 45o - 45o - 90o set-square is
(A) 0 (B) 1 (C) 2 (D) 3

16. The number of lines of symmetry in a 30o - 60o - 90o set square is
(A) 0 (B) 1 (C) 2 (D) 3

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

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

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).

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

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

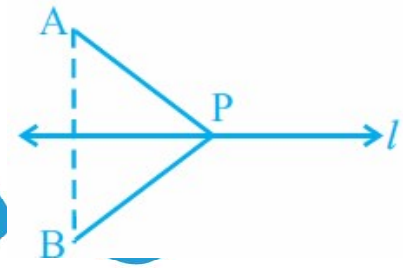
21. The number of lines of symmetry in a rectangle and a square are_____(equal/unequal).

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

23. If an angle of measure 80o is reflected in a line of symmetry, then thereflection is an _____ of measure _____.

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

25. In Fig. 9.10, if B is the image of the 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 _____.



26. The number of lines of symmetry in Figure is_____.

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 _____.

28. The digits having only two lines of symmetry are_____ and _____.

29. The digit having only one line of symmetry is _____.

30. The number of digits having no line of symmetry is_____.

31. The number of capital letters of the English alphabets having only vertical line of symmetry is_____.

32. The number of capital letters of the English alphabets having only horizontal line of symmetry is_____.

33. The number of capital letters of the English alphabets having both horizontal and vertical lines of symmetry is_____.

34. The number of capital letters of the English alphabets having no line of symmetry is_____.

35. The line of symmetry of a line segment is the _____ bisector of the line segment.

36. The number of lines of symmetry in a regular hexagon is _____.

37. The number of lines of symmetry in a regular polygon of n sides is_____.

38. A protractor has _____ line/lines of symmetry.

39. A 30o - 60o - 90o set-square has _____ line/lines of symmetry.

40. A 45o - 45o - 90o set-square has _____ line/lines of symmetry.

41. A rhombus is symmetrical about _____.

42. A rectangle is symmetrical about the lines joining the _____ of the opposite sides.

In questions 43 - 61, state whether the statements are true (T) or false (F).

43. A right triangle can have at most one line of symmetry.

44. A kite has two lines of symmetry.

45. A parallelogram has no line of symmetry.

46. If an isosceles triangle has more than one line of symmetry, then it need not be an equilateral triangle.

47. If a rectangle has more than two lines of symmetry, then it must be a square.

48. With ruler and compasses, we can bisect any given line segment.

49. Only one perpendicular bisector can be drawn to a given line segment.

50. Two perpendiculars can be drawn to a given line from a point not lying on it.

51. With a given centre and a given radius, only one circle can be drawn.

52. Using only the two set-squares of the geometry box, an angle of 40o can be drawn.

53. Using only the two set-squares of the geometry box, an angle of 15^{o} can be drawn.

54. If an isosceles triangle has more than one line of symmetry, then it must be an equilateral triangle.

55. A square and a rectangle have the same number of lines of symmetry.

56. A circle has only 16 lines of symmetry.

57. A 45^{o} - 45^{o} - 90^{o} set-square and a protractor have the same number of lines of symmetry.

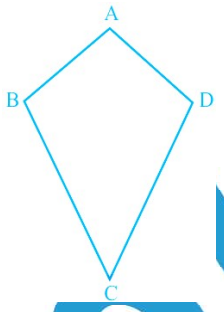
58. It is possible to draw two bisectors of a given angle.

59. A regular octagon has 10 lines of symmetry.

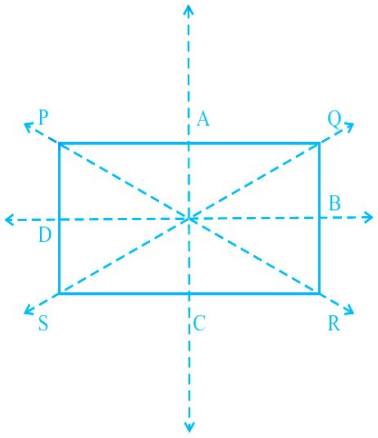
60. Infinitely many perpendiculars can be drawn to a given ray.

61. Infinitely many perpendicular bisectors can be drawn to a given ray.

62. Is there any line of symmetry in the Fig. If yes, draw all the lines of symmetry.



63. In Fig. PQRS is a rectangle. State the lines of symmetry of the rectangle.



64. Write all the capital letters of the English alphabets which have more than one lines of symmetry.

65. Write the letters of the word 'MATHEMATICS' which have no line of symmetry.

66. Write the number of lines of symmetry in each letter of the word 'SYMMETRY'.

67. Match the following:

Shape	Number of lines of symmetry
(i) Isosceles triangle	(a) 6
(ii) Square	(b) 5
(iii) Kite	(c) 4
(iv) Equilateral triangle	(d) 3
(v) Rectangle	(e) 2
(vi) Regular hexagon	(f) 1
(vii) Scalene triangle	(g) 0

68. Open your geometry box. There are some drawing tools. Observe them and complete the following table:

Name of the tool	Number of lines of symmetry
(i) The Ruler	_____
(ii) The Divider	_____
(iii) The Compasses	_____
(iv) The Protactor	_____
(v) Triangular piece with two equal sides	_____
(vi) Triangular piece with unequal sides	_____

ANSWER KEY

1.	(b)	2.	(a)	3.	(d)	4.	(c)	5.	(b)	6.	(b)	7.	(d)
8.	(b)	9.	(b)	10.	(c)	11.	(c)	12.	(b)	13.	(a)	14.	(b)
15.	(b)	16.	(a)	17.	(d)								