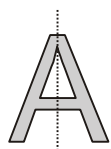
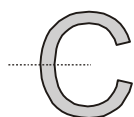


### EXERCISE 17.1

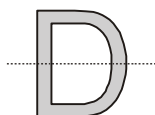
1. (i) Vertical line of symmetry



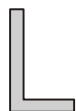
- (ii) Horizontal line of symmetry



- (iii) Horizontal line of symmetry



- (iv) No line of symmetry (not symmetrical)



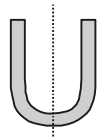
- (v) No line of symmetry (not symmetrical)



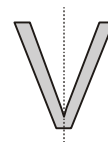
- (vi) Vertical line of symmetry



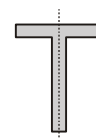
- (vii) Vertical line of symmetry



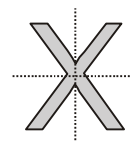
- (viii) Vertical line of symmetry



- (ix) Vertical line of symmetry

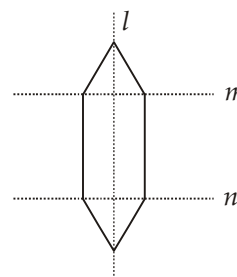


- (x) Vertical and horizontal lines of symmetry



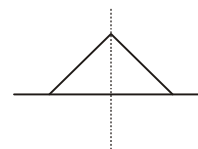
2. If a line divides the given figure into two identical halves, then we say that the given figure is symmetrical about that line.

Here, line  $l$  divides the given figure into two identical halves.

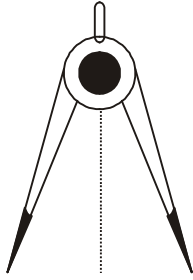


So, the given figure is symmetrical about line  $l$ .

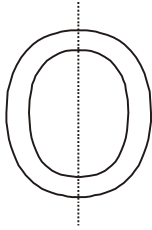
3. (i)



(ii)



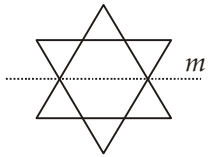
(iii)



4. Four symmetrical objects are :

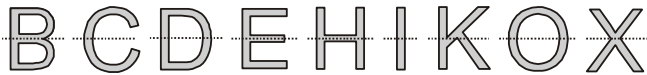
1. Top of table
2. Blackboard
3. A pair of scissors
4. Computer disc

5.

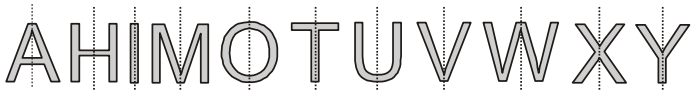


### EXERCISE 17.2

1. (i) Letters of English alphabet which have horizontal lines of symmetry are B, C, D, E, H, I, K, O and X.

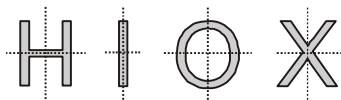


(ii) Letters of English alphabet which have vertical lines of symmetry are A, H, I, M, O, T, U, V, W, X and Y.

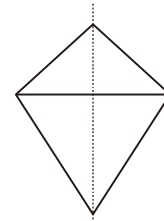


(iii) Letters of English alphabet which have no line of symmetry are F, G, J, L, N, P, Q, R, S and Z.

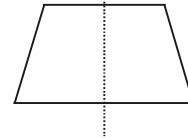
(iv) Letters of English alphabet which have vertical and horizontal lines of symmetry are H, I, O and X.



2. A kite (an arrow head) has only one line of symmetry which is about the longer diagonal.

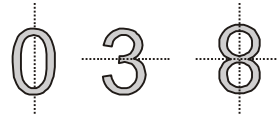


Isosceles trapezium also has one line of symmetry.

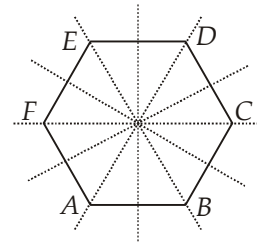


Which is the line joining the mid points of parallel sides.

3. The digits from 0 to 9 which have line of symmetry are 0, 3 and 8.

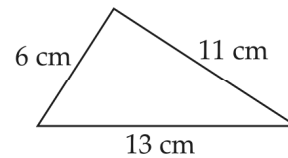


4.



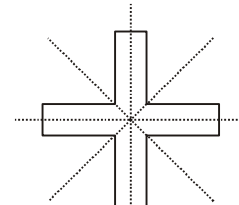
In the given figure, ABCDEF is a regular hexagon having six lines of symmetry. Three along the line joining the mid-points of opposite sides and three along the diagonals.

5. (i)



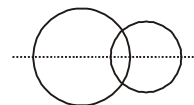
It is a scalene triangle. It has no line of symmetry.

(ii)



The figure has 4 lines of symmetry.

(iii)



The figure has 1 line of symmetry.

## MULTIPLE CHOICE QUESTIONS

- A rectangle has two lines of symmetry, each one of which is the line joining the mid-points of opposite sides.  
Hence, option (d) is correct.
- Since, a scalene triangle has all the three sides of different lengths. So, it has no line of symmetry.  
Hence, option (b) is correct.
- A rhombus is symmetrical about each one of its diagonals, so it has 2 lines of symmetry.  
Hence, option (b) is correct.
- Letter B has 1 line of symmetry (horizontal line).  
Hence, option (a) is correct.
- Alphabet H has vertical and horizontal lines of symmetry.  
Hence, option (b) is correct.
- When a line divides the given figure into two identical halves, then the line is called line of symmetry.  
Hence, option (c) is correct.
- A rhombus is symmetrical about each of its diagonals.  
Hence, option (b) is correct.
- Letters W and A have vertical line of symmetry. Letter X has both lines of symmetry. R is not symmetrical.  
Hence, option (c) is correct.

## MENTAL MATHS CORNER

### A. Fill in the blanks:

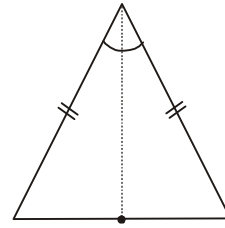
- The number of lines of symmetry in a regular polygon is **equal to the number of sides**.
- The line of symmetry divides a figure into two equal parts in which one part will **coincide** with other.
- A kite is symmetrical about the **longer diagonal**.
- A line segment is symmetrical about its **perpendicular bisector**.
- A circle has **infinite number** of lines of symmetry.

### B. True or False:

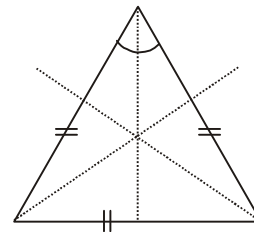
- A semi-circle has two lines of symmetry. **(False)**
- An angle with equal arms has its bisector as the line of symmetry. **(True)**
- Each one of the letters H, I, A and X of the English alphabet has two lines of symmetry. **(False)**  
 $\therefore$  H, I, O and X have two lines of symmetry.
- The quadrilateral which have only two lines of symmetry is a square. **(False)**
- The number of lines of symmetry of the letter Z of the English alphabet is 0. **(True)**

## REVIEW EXERCISE

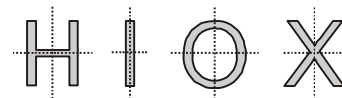
- (i) Yes, a scalene triangle no lines of symmetry.  
(ii) Yes, an isosceles triangle has one line of symmetry.



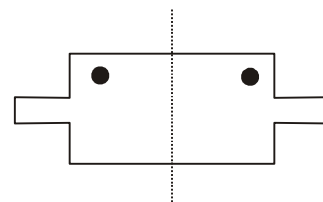
- (iii) No, we cannot draw a triangle which has exactly two lines of symmetry.  
(iv) Yes, an equilateral triangle has three lines of symmetry.



- Letters of English alphabet which have both vertical and horizontal lines of symmetry are H, I, O and X.

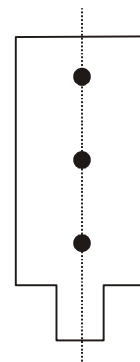


- (i)



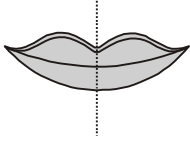
Vertical line of symmetry.

- (ii)



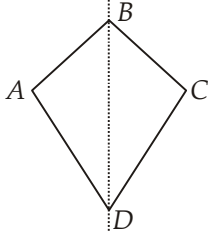
Vertical line of symmetry.

(iii)



Vertical line of symmetry.

4. In the given figure,  $ABCD$  is a kite. The line segment  $BD$  longer diagonal is the line of symmetry.

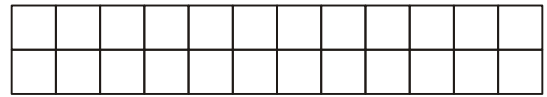
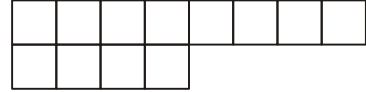
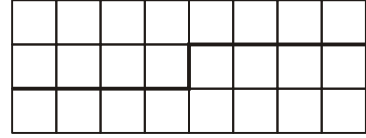
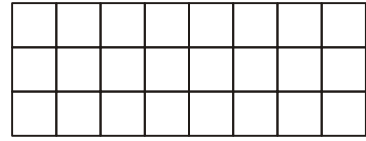


5.

Shape	Rough figure	No. of lines of symmetry
Square		4
Rhombus		2
Circle		infinite
Isosceles triangle		1
Equilateral triangle		3

## HOTS QUESTIONS

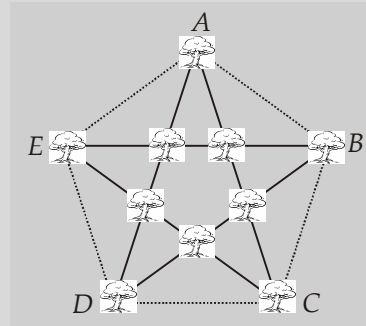
1. This is the given rectangles of size  $(3 \text{ cm} \times 8 \text{ cm})$ .



There are 2 identical parts such that they exactly cover the rectangle of size  $(2 \text{ cm} \times 12 \text{ cm})$ .

## Puzzle

The trees should be as star shape.



We plant the 10 trees at the 5 vertices  $A, B, C, D, E$  and 5 intersection point of diagonals of a regular pentagon.