

# CHAPTER 13

## SYMMETRY

### Question 1.

How many lines of symmetry do the following English alphabets have?

(i)

**H**

(ii)

**I**

### Solution:

The letters H and I of English alphabets have two lines of symmetry, as shown below:

(i)

**H**

(ii)

**I**

### Question 2.

How many lines of symmetry do the following letters of English alphabets have?

(i)

**F**

(ii)

**J**

### Solution:

The letters F and J of English alphabets, do not have any line of symmetry.

### Question 3.

List all the letters of English alphabets which have rotational symmetry.

### Solution:

Following letters of English alphabets have rotational symmetry.

**H I N O S X M**

### Question 4.

Write four such English letters which have no line of symmetry.

### Solution:

The 4 English letters having no line of symmetry are: P, F, G and Z.

**Question 5.**

Write 5 such English letters which have horizontal line of symmetry.

**Solution:**

The required letters are:

E, B, C, D, K

**Question 6.**

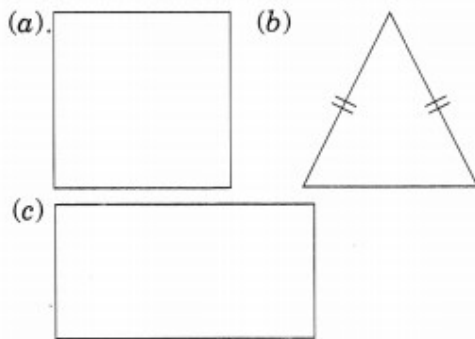
Write 4 English letters which have vertical lines of symmetry.

**Solution:**

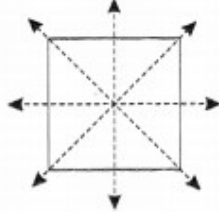
The required English letters are A, H, I, M

**Question 7.**

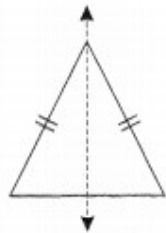
How many symmetrical lines do they have?

**Solution:**

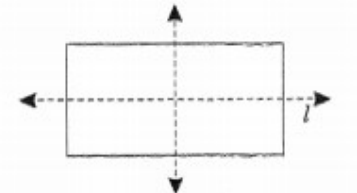
(a) The figure is a square. It has 4 lines of symmetry.



(b) It is an isosceles triangle. It has one vertical line of symmetry.

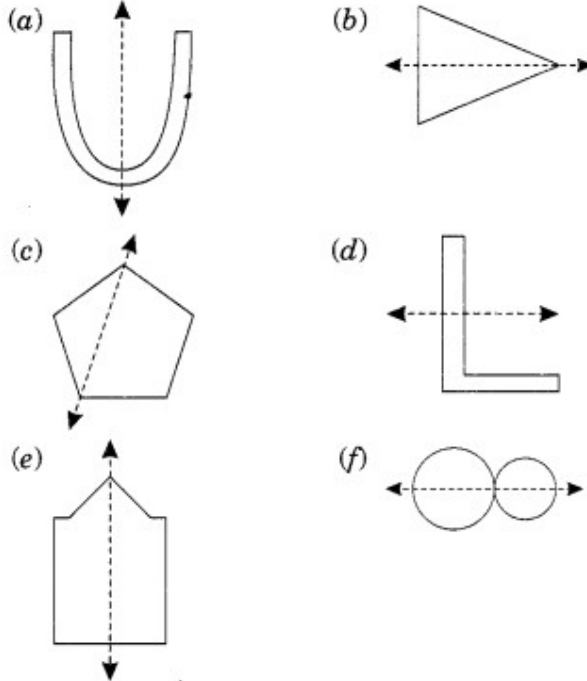


(c) The given figure is a rectangle which has two lines of symmetry.



**Question 8.**

Find in which of the following, the dotted line is a line of symmetry.

**Solution:**

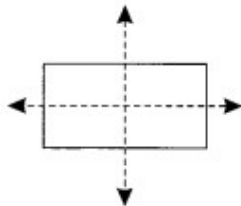
- (a) The dotted line is a line of symmetry.
- (b) The dotted line is a line of symmetry.
- (c) The dotted line is not a line of symmetry.
- (d) The dotted line is not a line of symmetry.
- (e) The dotted line is a line of symmetry.
- (f) The dotted line is a line of symmetry.

**Question 9.**

How many lines of symmetry does (a) a rectangle (b) a square (c) a parallelogram have? What about right angled triangle?

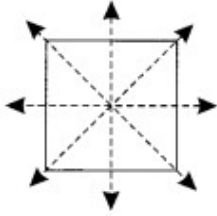
**Solution:**

- (a) Rectangle has two lines of symmetry
  - (i) Horizontal
  - (ii) Vertical



- (b) Square has four lines of symmetry.
  - (i) 1 horizontal
  - (ii) 1 vertical

(iii) 2 diagonally



(c) Parallelogram has no lines of symmetry



Right angled triangle has no line of symmetry.



**Question 10.**

Fill in the blanks:

- (a) An angle is symmetrical about its .....
- (b) A circle has ..... lines of symmetry.
- (c) A rectangle ..... has lines of symmetry.
- (d) A square has ..... lines of symmetry.
- (e) A letter D has ..... lines of symmetry.
- (f) A letter N has ..... lines of symmetry.
- (g) A kite is symmetrical about its longer .....
- (h) A scalene triangle has ..... lines of symmetry.
- (i) A line of symmetry of an object is also called its ..... of symmetry.
- (j) An equilateral triangle has ..... lines of symmetry.
- (k) A regular pentagon has ..... lines of symmetry.
- (l) A line of ..... divides a figure into two similar parts.

**Solution:**

- (a) bisector
- (b) infinite
- (c) two
- (d) four
- (e) one
- (f) no
- (g) diagonal
- (h) no
- (i) axis
- (j) three
- (k) five
- (l) symmetry

**Question 11.**

Show by figure the English alphabets which look the same in their reflected image.

Solution:

The following English alphabets look same after reflections.

(a) A | A

(b) I | I

(c) H | H

(d) M | M

(e) O | O

(f) T | T

(g) U | U

(h) V | V

(i) W | W

(j) X | X

(k) Y | Y