NCERT SOLUTIONS FOR CLASS 6 MATHS

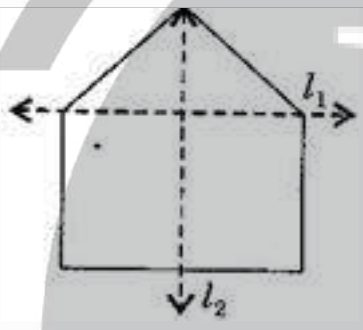
Chapter 13 : Symmetry

Exercise 13.1

Question 1.List any four symmetrical from your home or school.

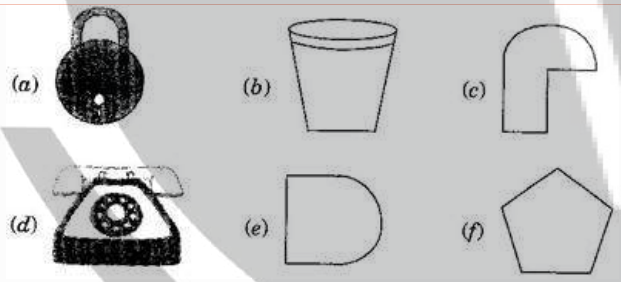
Answer: *Notebook, Blackboard, Glass, Inkpot.*

Question 2.For the given figure, which one is the mirror line, l_1 or l_2?



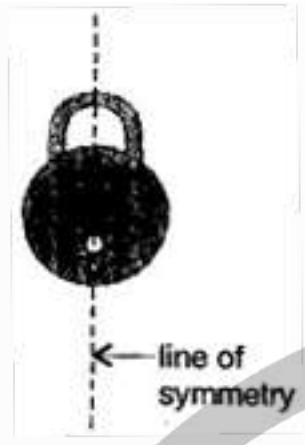
Answer: *l_2 is the mirror line as both sides of the lines are symmetric.*

Question 3.Identify the shapes given below. Check whether they are symmetric or not. Draw the line of symmetry as well.

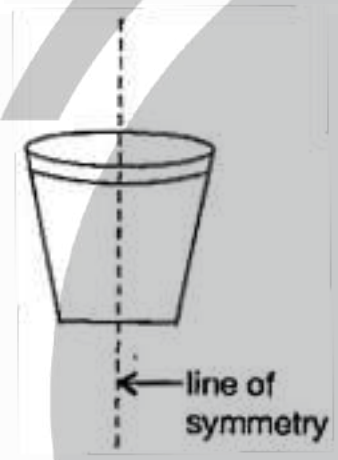


Answer:

(a) Symmetric

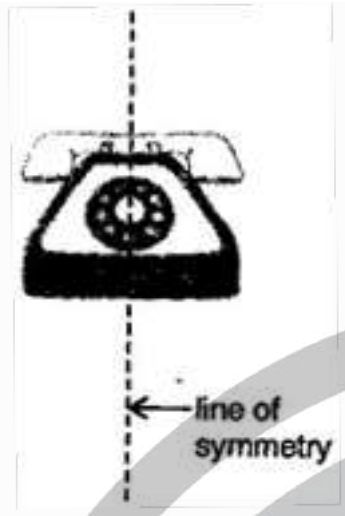


(b) Symmetric

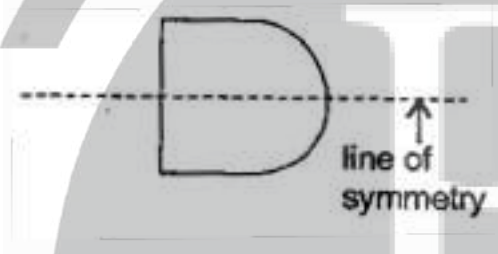


(c) Not symmetric

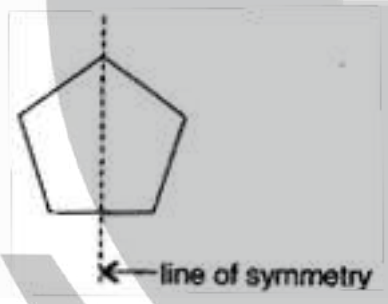
(d) Symmetric



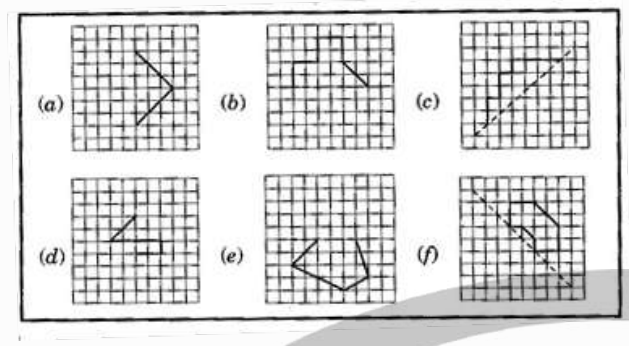
(e) Symmetric



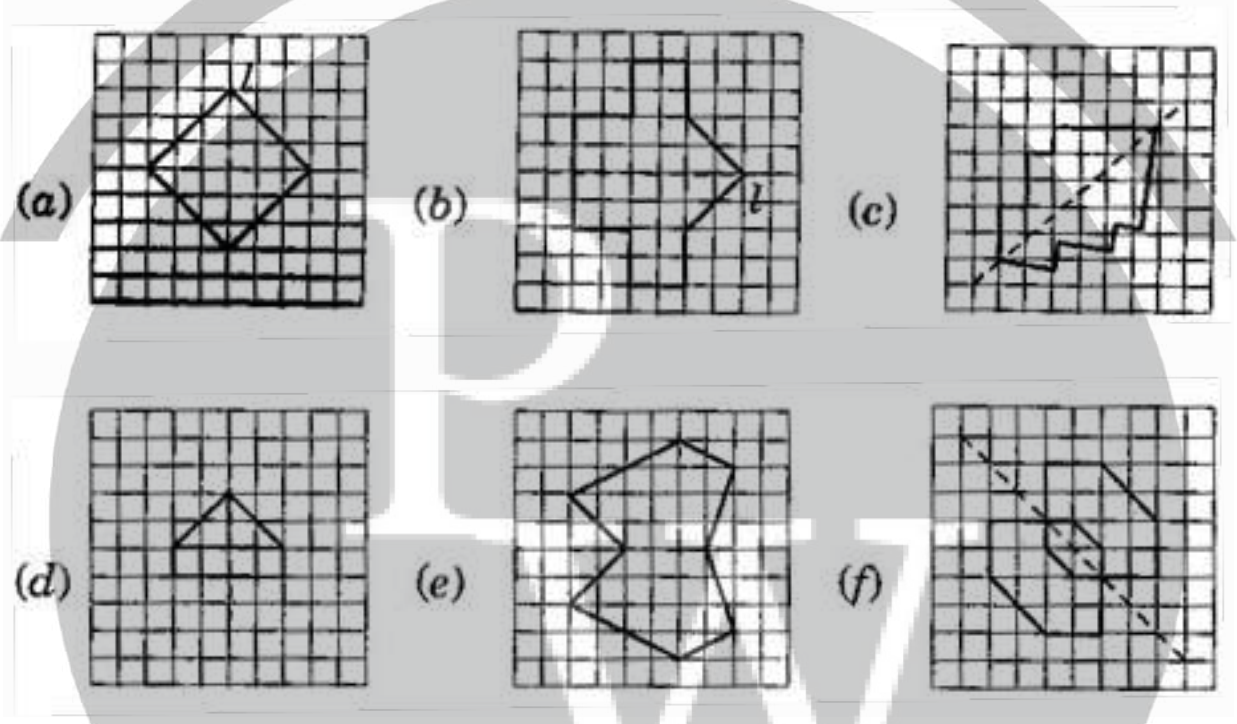
(f)Symmetric



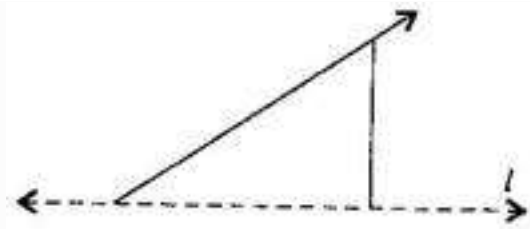
Question 4.Copy the following on a square paper. A square paper is what you would have used in your arithmetic notebook in earlier classes. Then complete them such that the dotted line is the line of symmetry.



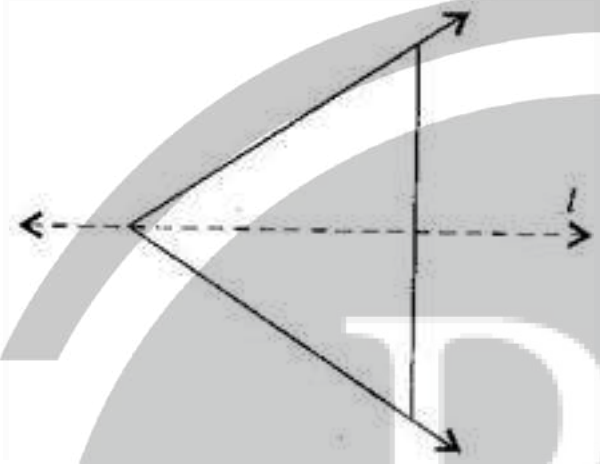
Answer:



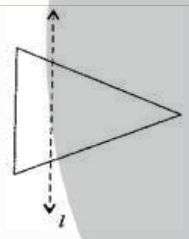
Question 5.In the figure, l is the line of symmetry. Complete the diagram to make it symmetric.



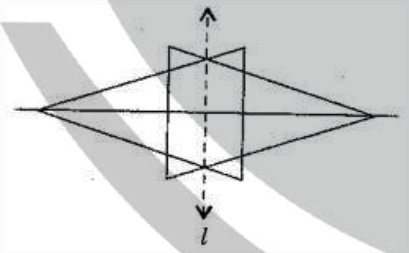
Answer:



Question 6.In the figure, l is the line of symmetry. Draw the image of the triangle and complete the diagram, so that it becomes symmetric.

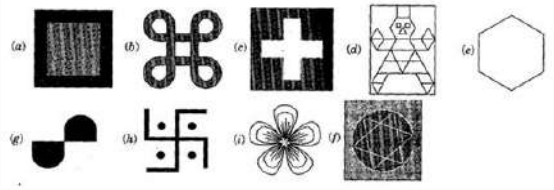


Answer:



Exercise 13.2

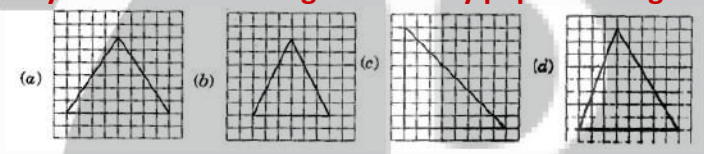
Question 1.Find the number of lines of symmetry for each of the following shapes:



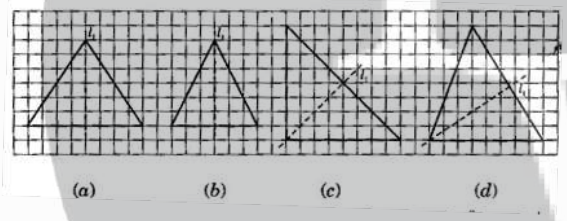
Answer:

(a) 4, (b) 4, (c) 4, (d) 1, (e) 6, (f) 4, (g) 0, (h) 0, (i) 3

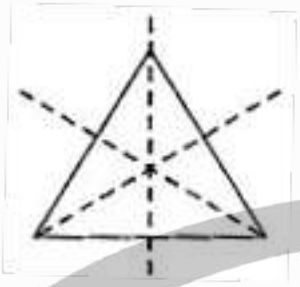
Question 2. Copy the triangle in each of the following figures, on squared paper. In each case, draw the line(s) of symmetry. If any and identity the type of triangle. (Some of you may like to trace the figures and try paper-folding first!)



Answer:



Question 3.Complete the following table:

Shape	**Rough figure**	**No. of lines of symmetry**
Equilateral triangle		3
Square		
Rectangle		
Isosceles triangle		
Rhombus		
Circle		

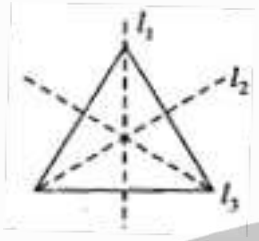
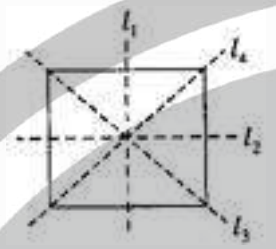
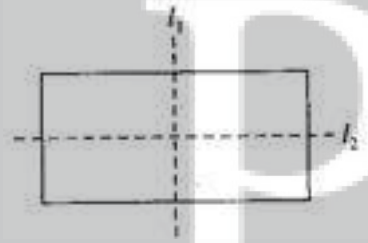
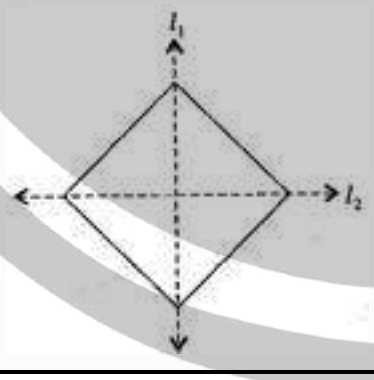
(a) l1l1 is the line of symmetry.

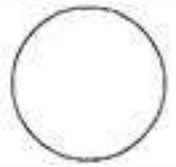
(b) l1l1 is the line of symmetry.

(c) l1l1 is the line of symmetry.

(d) No line of symmetry.

Answer:

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

Circle		Infinite

Question 4.Can you draw a triangle which has:

(a) exactly one line of symmetry?

(b) exactly two lines of symmetry?

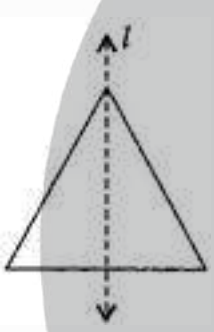
(c) exactly three lines of symmetry?

(d) no lines of symmetry?

Sketch a rough figure in each case.

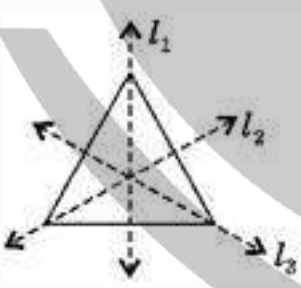
Answer:

(a) Yes, Isosceles triangle

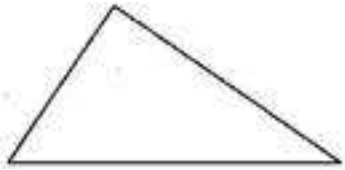


(b) No such triangle cannot be formed.

(c) Yes, Equilateral triangle



(d) Yes, Scalene triangle



Question 5.On a squared paper, sketch the following:

(a) A triangle with a horizontal line of symmetry but no vertical line of symmetry.

(b) A quadrilateral with both horizontal and vertical lines of symmetry.

(c) A quadrilateral with a horizontal line of symmetry but no vertical line of symmetry.

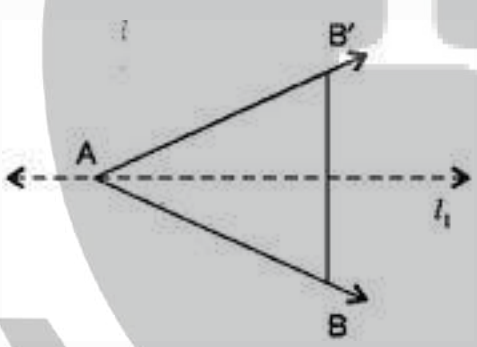
(d) A hexagon with exactly with two lines of symmetry.

(e) A hexagon with six lines of symmetry.

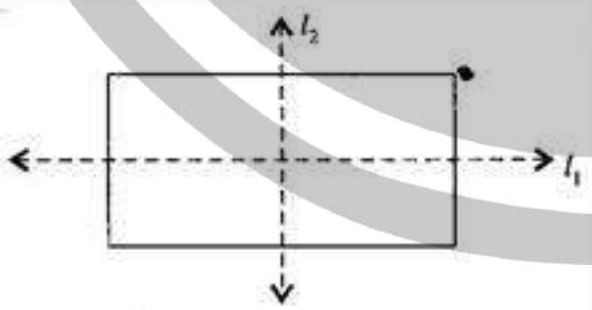
(**Hint**: It will be helpful if you first draw the lines of symmetry and then complete the figures)

Answer:

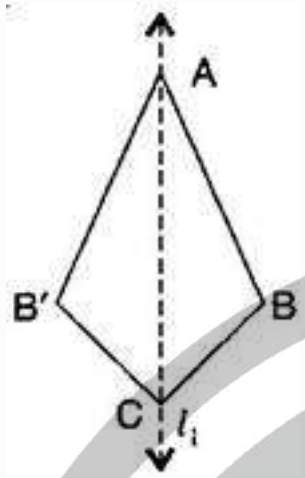
(a)



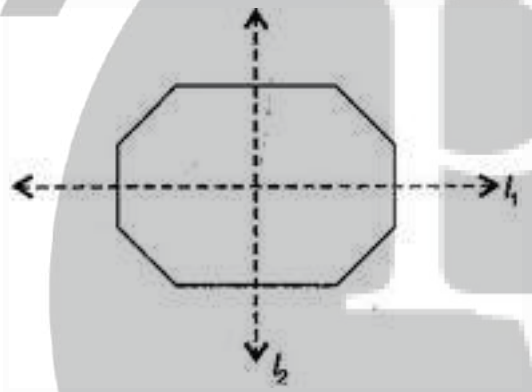
(b)



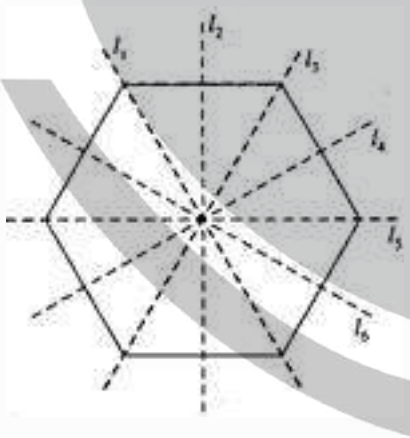
(c)



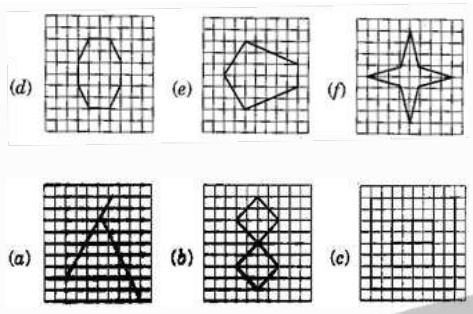
(d)



(e)

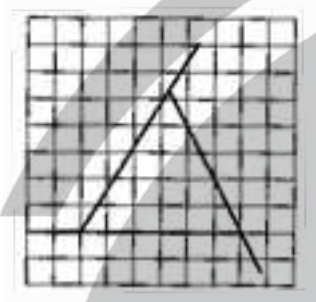


Question 6.Trace each figure and draw the lines of symmetry, if any:

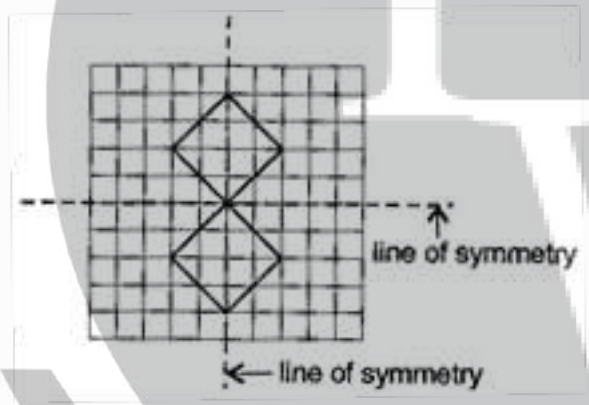


Answer:

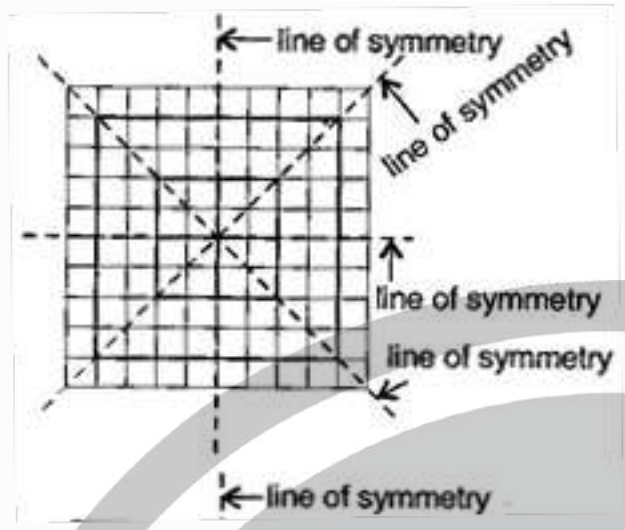
(a) No line



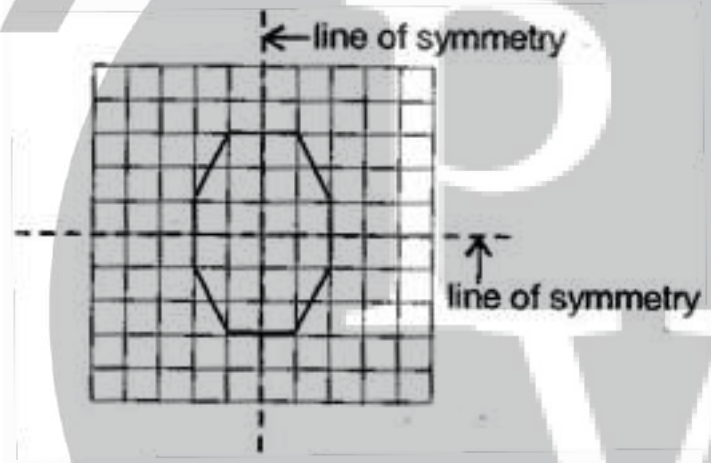
(b) Two lines



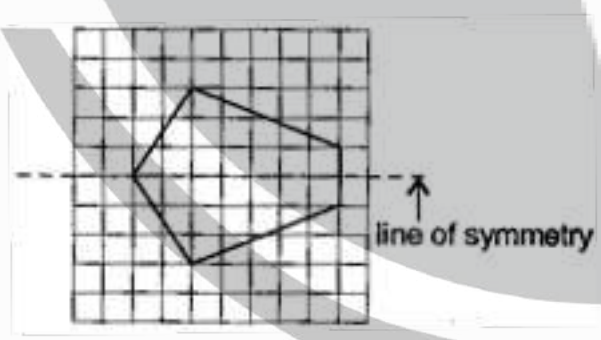
(c) Four lines



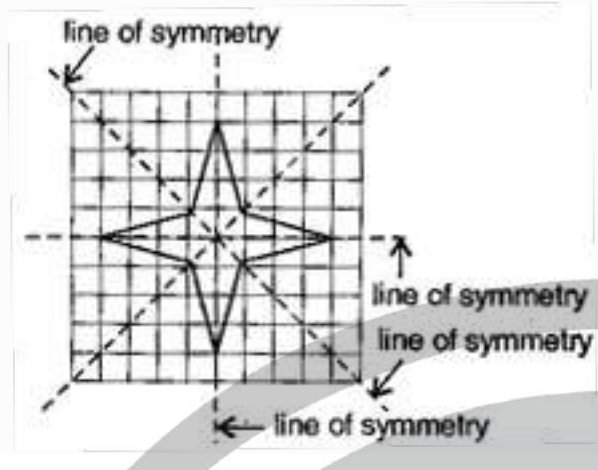
(d) Two lines



(e) One line



(f)



Question 7.Consider the letters of English alphabets A to Z. List among them the letters which have:

(a) vertical lines of symmetry (like A)

(b) horizontal lines of symmetry (like B)

(c) no lines of symmetry (like Q)

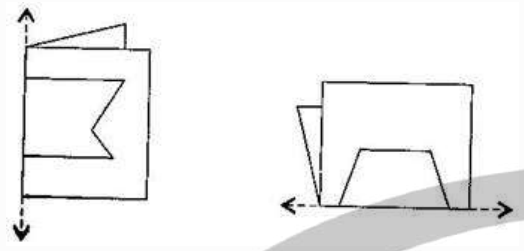
Answer:

Vertical lines: A, H, I, M, O, T, U, V, W, X, Y

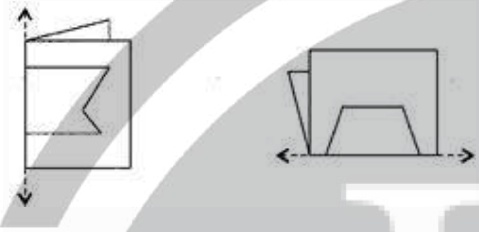
Horizontal lines: B, C, D, E, H, I, K, O, X

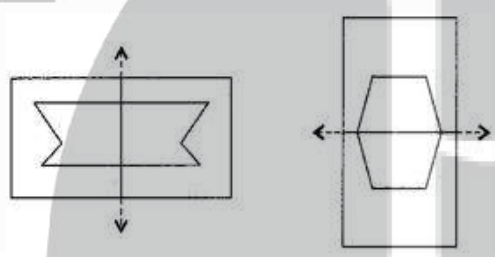
No line of symmetry: F, G, J, I, N, P, Q, R, S, Z

Question 8.Given here are figures of a few folded sheets and designs drawn about the fold. In each case, draw a rough diagram of the complete figure that would be seen when the design is cut off.



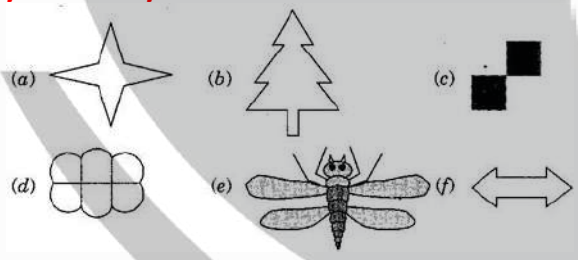
Answer:



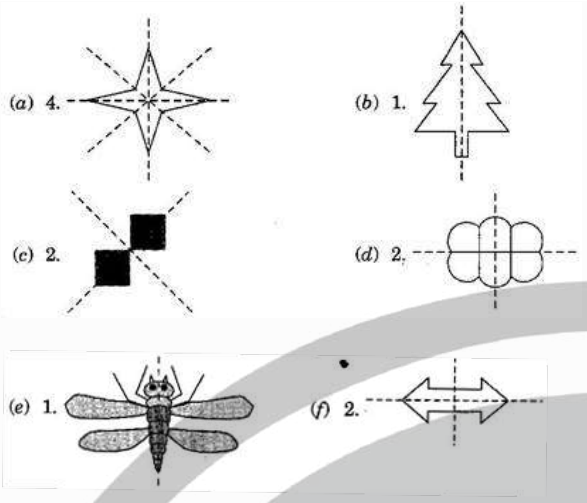


Exercise 13.3

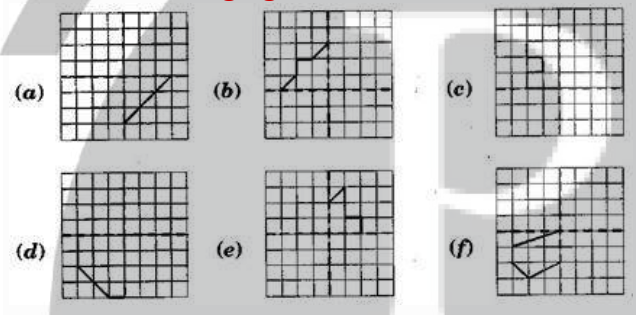
Question 1.Find the number of lines of symmetry in each of the following shapes. How will you check your answer?



Answer:

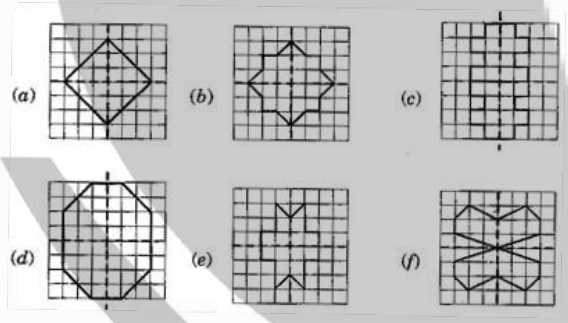


Question 2.Copy the following drawing on squared paper. Complete each one of them such that the resulting figure has two dotted lines as two lines of symmetry.

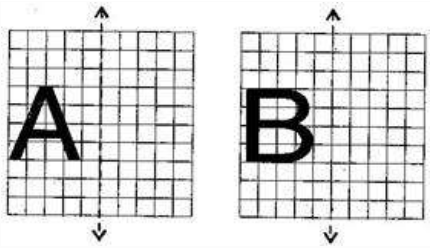


How did you go about completing the picture?

Answer:



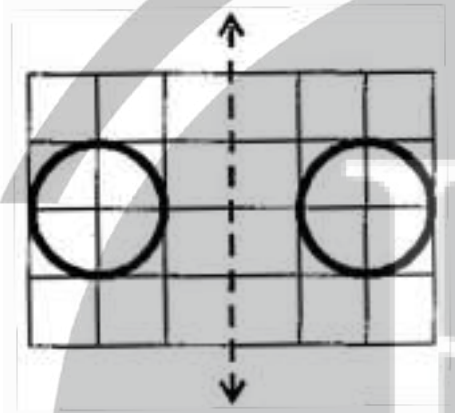
Question 3.In each figure below, a letter of alphabet is shown along with a vertical line. Take the mirror image of the letter in the given line. Find which letters look the same after reflection (i.e., which letters look the same in the image) and which do not. Can you guess why?



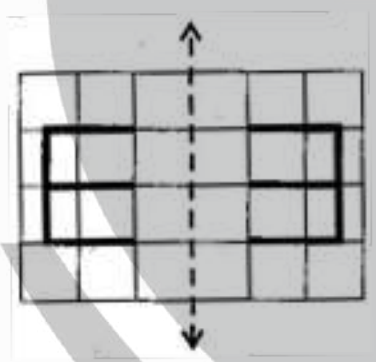
Try for O E M N P H L T S V X

Answer:

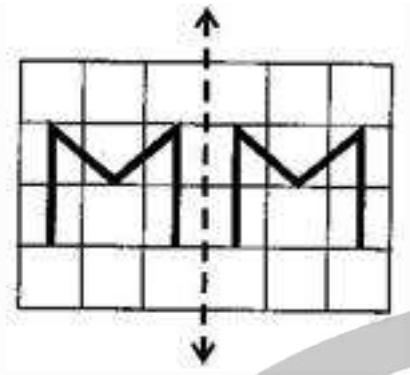
Same after reflection



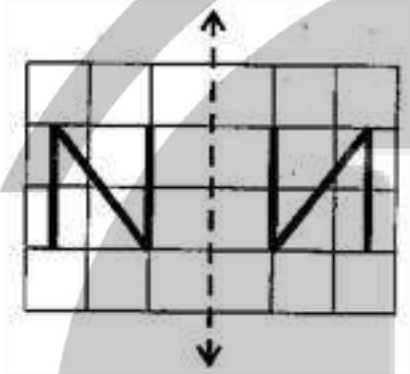
Different after reflection



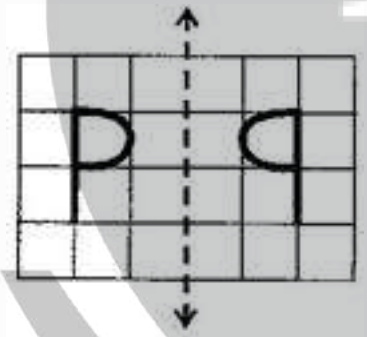
Same after reflection



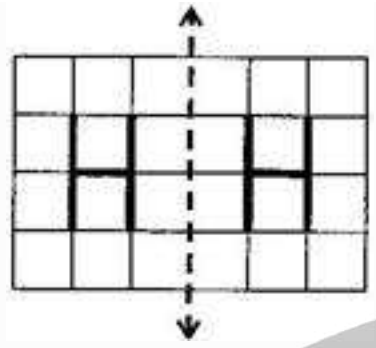
Different after reflection



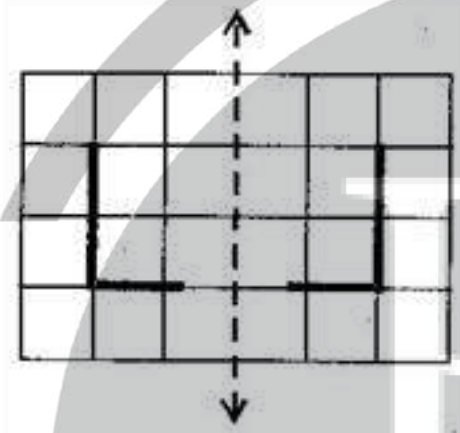
Different after reflection



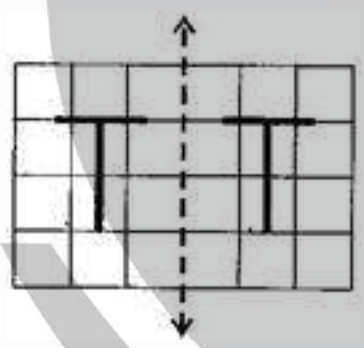
Same after reflection



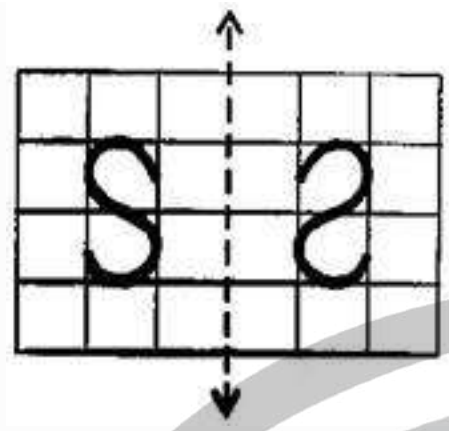
Different after reflection



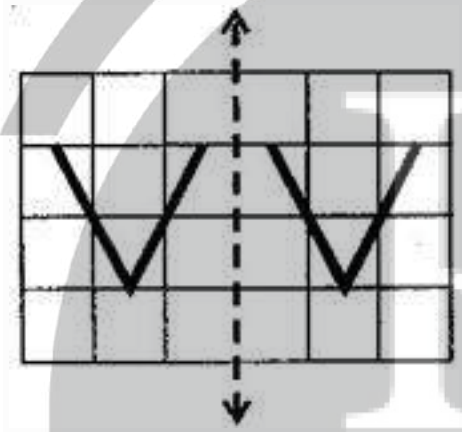
Same after reflection



Different after reflection



Same after reflection



Same after reflection