Operation of rotation through the angles 90° and 180°

A. Choose the correct answer:

1. A rotation of 90° turns a shape

a) halfway around b) one-fourth turn

c) full turn d) one-third turn

2. A shape rotated 180° looks

a) completely different b) same as original

c) upside down d) turned 90°

3. When a figure is rotated 180°, it

a) returns to its original position b) faces opposite direction

c) stays the same d) rotates 90° again

4. A square rotated 90° clockwise will

a) look different b) overlap perfectly

c) tilt sideways d) become a rectangle

5. Which of the following letters remains the same after a 180° rotation?

a) A b) H

c) N d) O

B. Write the Missing Terms to Complete the Sentences:

1. A 90° rotation is also known as a _____ turn.
2. A 180° rotation moves a figure _____ around a point.
3. When rotated 90°, the shape turns _____ of a full circle.
4. A 180° rotation makes the figure face in the _____ direction.
5. A square rotated by 90° will _____ onto itself.

C. Mark each sentence with a True (✔) or False (✗):

1. A 90° rotation is one-fourth of a full turn. _____
2. A shape rotated 180° always looks the same as before. _____
3. Rotation is always done in clockwise direction only. _____

4. A circle looks the same after every 90° rotation. _____
5. A rotation of 180° brings a shape to the opposite orientation. _____

D. Figure out the answers to these questions:

1. Rotate a square 90° clockwise. Draw and compare the shape with the original.
2. Name any two letters that remain unchanged when rotated 180°.
3. If a triangle is rotated 90° clockwise and then 180°, how many degrees has it turned in total?
4. Draw a figure that changes shape after a 90° rotation but not after 180°.
5. Explain how a rotation of 90° differs from 180° in terms of direction and result.

E. Challenge yourself with these questions:

1. Rotate the letter “L” 90° clockwise and draw the result.
2. Find two English letters that look the same after 180° rotation.
3. Rotate a rectangle 90° and 180°. Compare both rotated positions.
4. Draw and rotate a triangle through 90° clockwise and observe its new position.
5. Show rotation of a clock hand from 12 to 3 and then from 12 to 6. Write the angles turned.