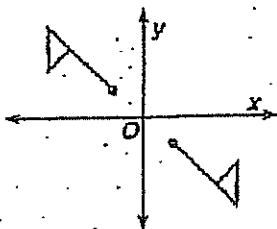


## Practice Worksheet 11-10

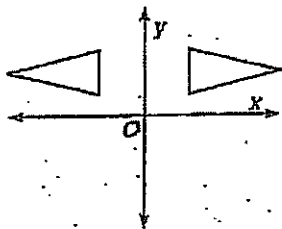
### Rotations

Determine whether each pair of figures represents a rotation. Write yes or no.

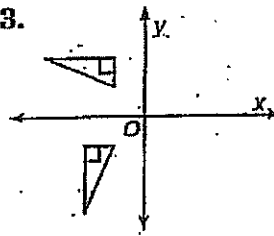
1.



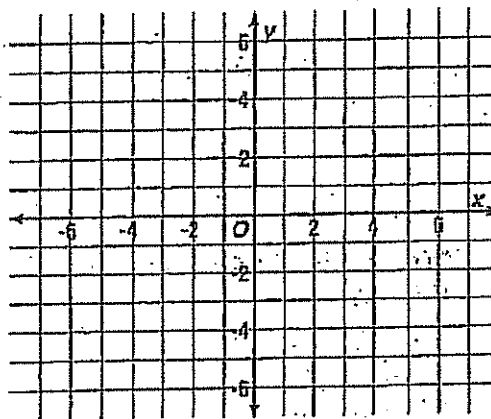
2.



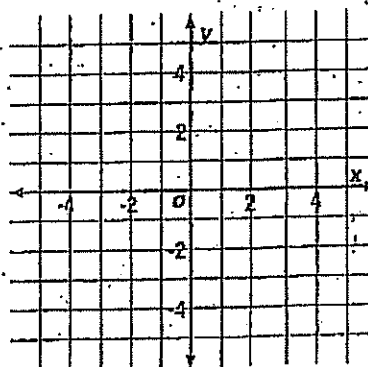
3.



4. Graph rectangle *WORK* with vertices  $W(1, 3)$ ,  $O(4, 6)$ ,  $R(6, 4)$ , and  $K(3, 1)$ .
- Rotate the rectangle  $90^\circ$  counterclockwise.
  - Rotate the rectangle  $180^\circ$ .



6. Quadrilateral *NEAL* has vertices  $N(3, 5)$ ,  $E(4, 4)$ ,  $A(3, 2)$  and  $L(1, 3)$ .
- Graph quadrilateral *NEAL* and its  $90^\circ$  counterclockwise rotation  $N'E'A'L'$ .
  - Rotate  $N'E'A'L'$   $90^\circ$  counterclockwise.
  - Rotate quadrilateral *NEAL*  $180^\circ$ . Explain the result.



7. A triangle is rotated  $90^\circ$  counterclockwise. The coordinates of the vertices of the rotated triangle are  $(3, 2)$ ,  $(-1, 3)$ , and  $(2, -3)$ . What are the coordinates of the original triangle?