

Directions: Write the rule of the transformation.

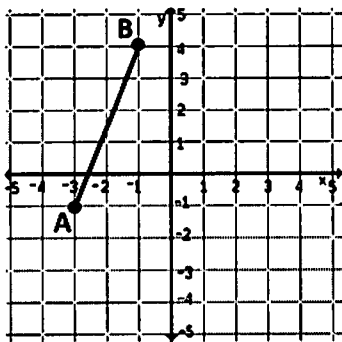
- 1) A triangle ABC is rotated 360 degrees CW.
- 2) A line segment DE is rotated 180 degrees.
- 3) A square MNOP is rotated 270 degrees CW.
- 4) A line segment XY is rotated 90 degrees CW.

Directions: Describe the transformation. (This is a mixed review).

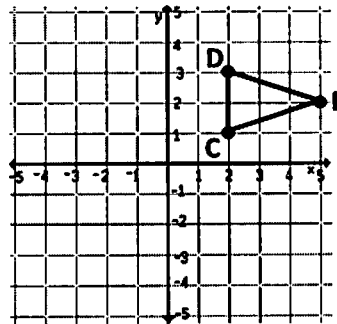
- 5)  $(x, y) \rightarrow (-y, x)$
- 6)  $(x, y) \rightarrow (y, -x)$
- 7)  $(x, y) \rightarrow (-x, -y)$
- 8)  $(x, y) \rightarrow (x + 2, y)$
- 9)  $(x, y) \rightarrow (-y, -x)$
- \*10)  $(x, y) \rightarrow (-y, x + 1)$

Directions: Complete the transformation of the new image. If the rule was provide, describe the transformation. If the transformation was described, write the rule.

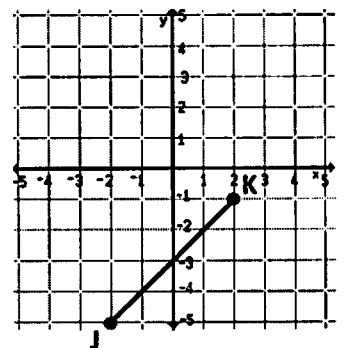
11)  $AB(x, y) \rightarrow A'B'(y, -x)$



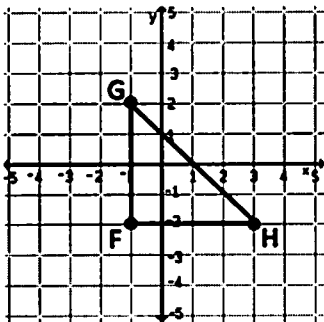
12)  $CDE(x, y) \rightarrow C'D'E'(-y, x)$



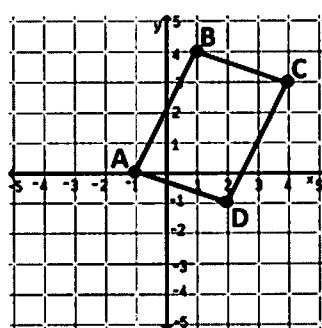
13)  $JK(x, y) \rightarrow J'K'(-x, -y)$



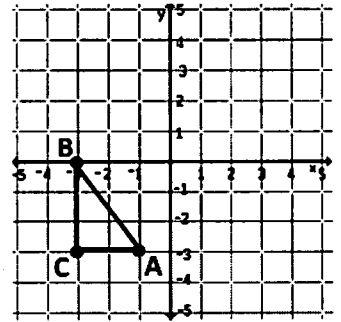
14) Rotate FGH by 270° CCW.



15) Rotate ABCD by 90° CCW.



16) Rotate ABC 180°



17) Find the image of  $(-34, 93)$  if it is rotated 90° clockwise about the origin. \_\_\_\_\_

18) Find the image of  $(-14, -38)$  if it is rotated 90° counterclockwise about the origin. \_\_\_\_\_

19. Find the image of  $(254, -180)$  if it is rotated 180° about the origin. \_\_\_\_\_

**Directions: Explain algebraically how to complete the rotation.**

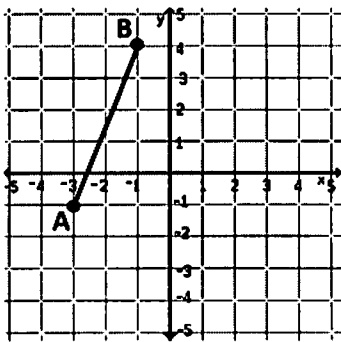
20) A line segment TP is rotated  $90^\circ$  CCW about the fixed point of  $J(3, -2)$ .

21) A triangle HUG is rotated  $180^\circ$  CW about the fixed point  $K(-5, 0)$ .

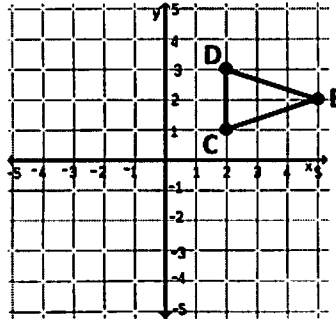
---

**Directions: Complete the rotation.**

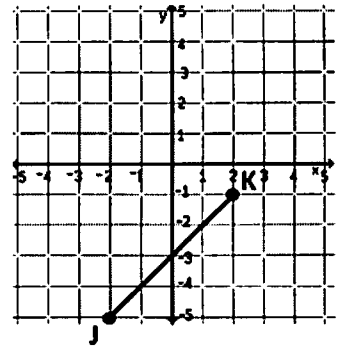
22) Rotate  $\overline{AB}$   $180^\circ$  about  $(0, 2)$



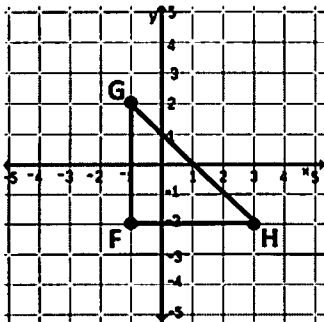
23) Rotate  $\triangle CDE$   $90^\circ$  CW about  $(3, 1)$



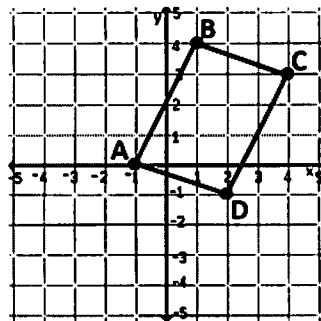
24) Rotate  $\overline{JK}$   $270^\circ$  CW about  $(0, -3)$



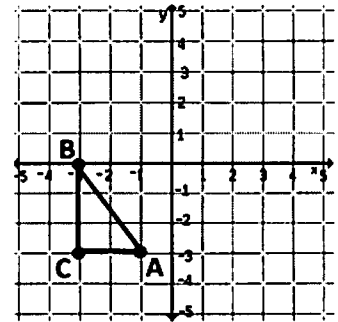
25) Rotate  $\triangle FGH$  by  $270^\circ$  CCW about  $(3, 0)$



26) Rotate ABCD by  $90^\circ$  CCW about  $(0, 0)$



27) Rotate  $\triangle ABC$   $180^\circ$  CW about Point B



---

**Directions: Find the specified image coordinate.**

28) If  $A(4, 10)$  is rotated  $90^\circ$  CCW about  $M(3, -1)$ , what is  $A'$ ?

29) If  $L(-2, -2)$  is rotated  $180^\circ$  CW about  $W(0, 6)$ , what is  $L'$ ?

30) If  $A$  is rotated  $90^\circ$  CCW about  $M(3, -1)$ , the image,  $A'$ , is  $(4, 10)$ . What is  $A$ ?

31) If  $L$  is rotated  $180^\circ$  CW about  $W(0, 6)$ , its image,  $L'$ , is  $(-2, -2)$ . What is  $L$ ?