Directions: Write the rule of the reflection.

1) A line segment is reflected over the y-axis.

2) A triangle is reflected over the x-axis.

Directions: Describe the transformation. (This is a mixed review & includes sequences of transformations).

3) $(x, y) \rightarrow {}'(x, -y)$

4) $(x, y) \rightarrow {}'(x + 2, y)$

5) $(x, y) \rightarrow {}'(-x, y)$
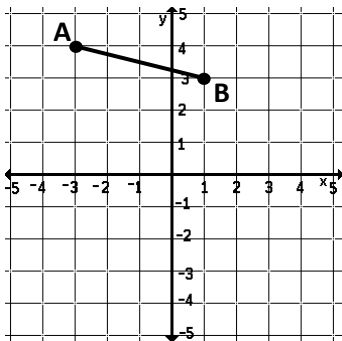
6) $(x, y) \rightarrow {}'(x - 4, y)$

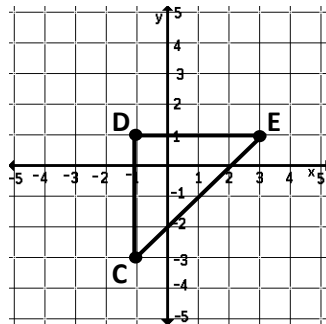*7) $(x, y) \rightarrow {}''(-x, y + 1)$

*8) $(x, y) \rightarrow {}''(x + 3, -y - 5)$

Directions: Complete the transformation of the new image. If the rule was provided, describe the transformation. If the transformation was described, write the rule.
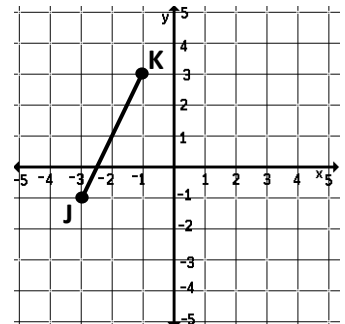
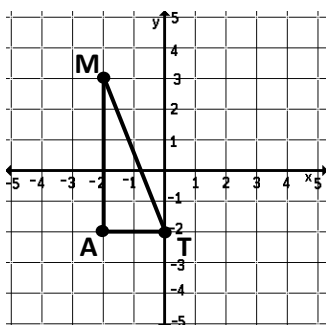9) $AB(x, y) \rightarrow A'B'(x, -y)$

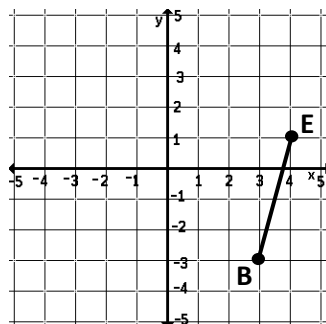10) $CDE (x, y) \rightarrow C'D'E' (x, -y)$

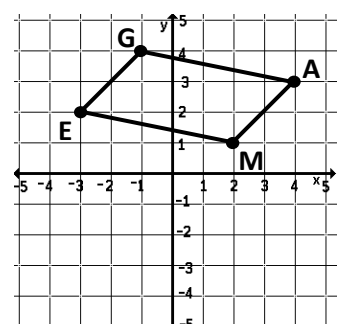11) $JK(x, y) \rightarrow J'K'(-x, y - 1)$

12) Reflect over y = 0.

*13) Reflect over the x-axis.
      Then, translate left 4 units.

14) Reflect over the y-axis.

Directions: Find the missing point using the given information.

15) If the result of $(x, y) \rightarrow '(x - 1, y + 2)$ is A'(−5, 2), what is the **pre-image**, or A?

16) The pre-image (−3, −9) is reflected using the rule $(x, y) \rightarrow '(x, -y)$. What is the image coordinate?

17) If B(4, −2) is applied to $(x, y) \rightarrow '(-x, y)$, what is the coordinate that represents the image?

18) If the result of $(x, y) \rightarrow '(-x, y)$ is B'(−6, −1), what is the **pre-image**, or B?

Directions: Solve each problem.

19) C(3, −2) and D(−1, 0) transforms to C'(−3, −2) and D'(1, 0). What transformation has occurred?

20) F(a, b) is reflected over the x-axis. If a < 0 an b > 0, in what quadrant with F" be located?

21) The function, $y = -2^x$, the passes through H(5, −32). If the graph is reflected over the y-axis, what are the coordinates of the image of H?

22) In the graph below, the pre-image is first reflected so that A' is located at (2, 2). The new image is then translated to A"(2, −2). At what ordered pair would B" be found following this same sequence of transformations?