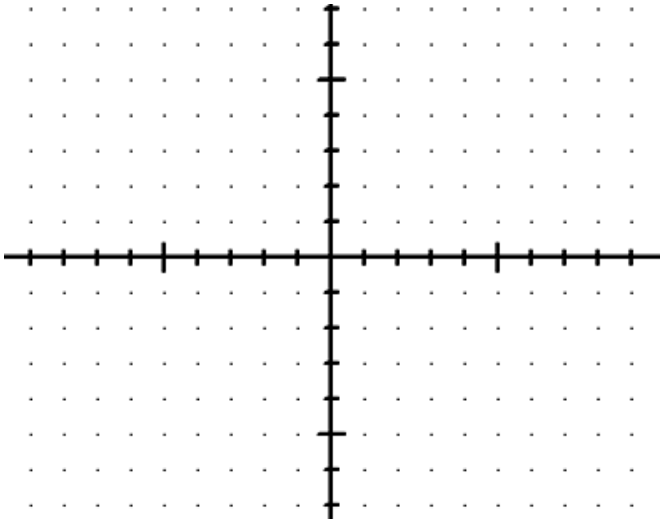
Name:_____Period:___ **Coordinates, Transformations, and Congruency G.CO**

Step 1: Graph the **same**, *scalene* quadrilateral (with *different* lengths) in ***each*** of the graphs:

Step 2: List **All** of the original coordinates of the Preimage here: **Label the points** $ABCD$

Step 3: Use the transformation rule in each problem on the Preimage and identify the coordinates of the image $A'B'C'D'$ and color code your shapes.

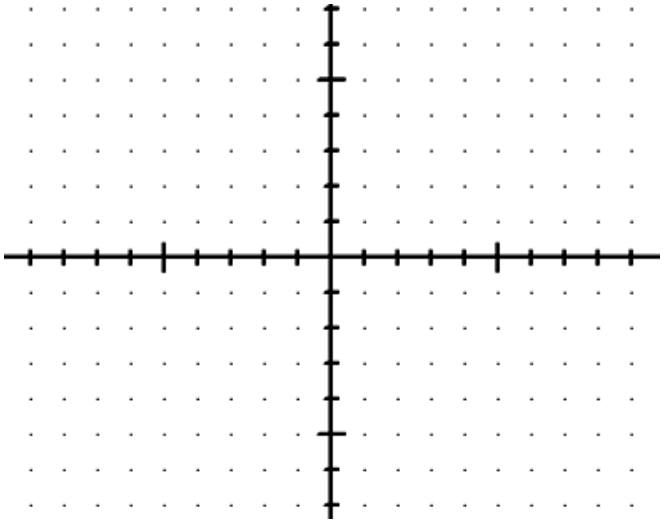
1) $(x+4,\ y-3)$



Label the image coordinate Points:

Describe the transformation:

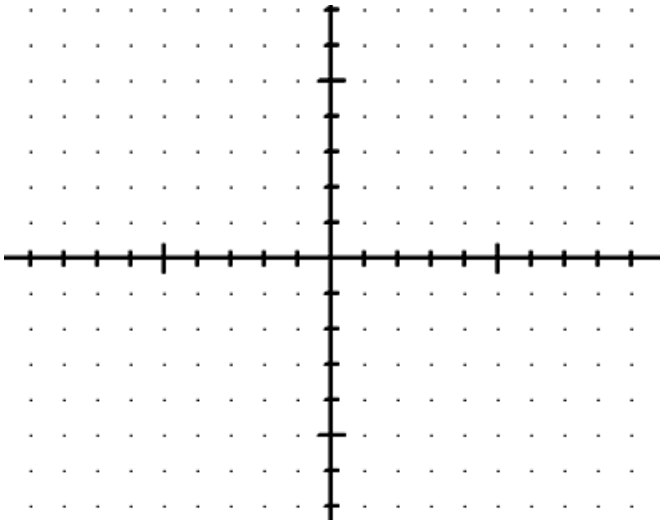
2 $(-x,\ y)$



Label the image coordinate Points:

Describe the transformation:

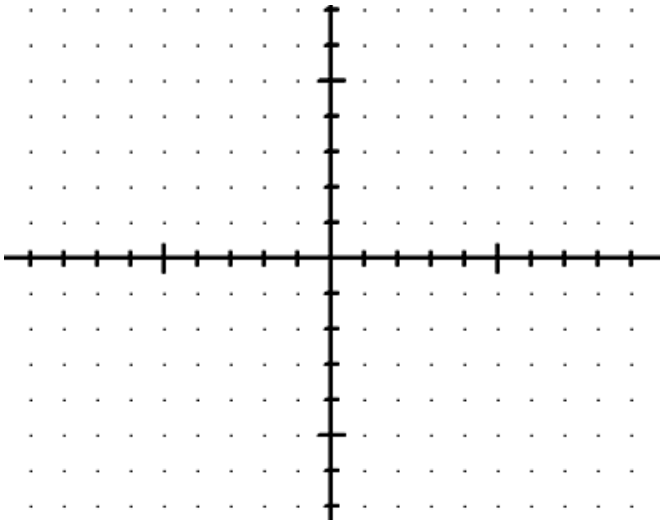
3) $(x,\ -y)$



Label the image coordinate Points:

Describe the transformation:

4) $(y,\ x)$ Draw the line $y = x$



Label the image coordinate Points:

Describe the transformation:

Determine the coordinates of each translated image without graphing.

5) The vertices of triangle ABC are A (5, 3), B (2, 8), and C (−4, 5). Translate the triangle 6 units to the left to form triangle $A'\ B'\ C'$.

6) The vertices of triangle RST are R (0, 3), S (2, 7), and T (3, −1). Translate the triangle 5 units to the left and 3 units up to form triangle $R'\ S'\ T'$.

7) The vertices of quadrilateral $WXYZ$ are W (−10, 8), X (−2, −1), Y (0, 0), and Z (3, 7). Translate the quadrilateral 5 units to the right and 8 units down to form quadrilateral $W'\ X'\ Y'\ Z'$.

Determine the coordinates of each reflected image without graphing.

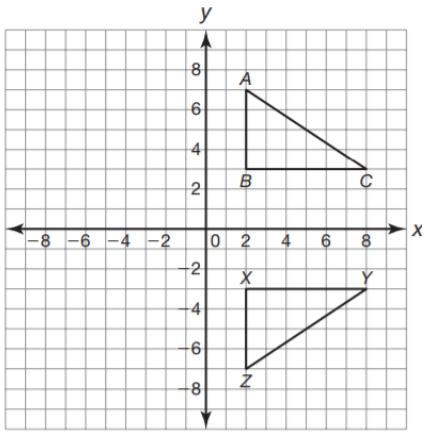
8) The vertices of triangle ABC are A (5, 3), B (2, 8), and C (−4, 5). Reflect the triangle over the x-axis to form triangle $A'\ B'\ C'$.

9) The vertices of trapezoid $MNPQ$ are M (−6, −5), N (0, −5), P (−1, 2), and Q (−4, 2). Reflect the trapezoid over the y-axis to form trapezoid $M'\ N'\ P'\ Q'$.

10) The vertices of triangle RST are R (0, 3), S (2, 7), and T (3, −1). Reflect the triangle over the x-axis to form triangle $R'\ S'\ T'$.

Identify the transformation used to create $\triangle XYZ$ on each coordinate plane. Identify the congruent angles and the congruent sides. Then, write a triangle congruence statement.

11)



12)