Class #8 Practice

1. Match each coordinate rule to a description of its resulting transformation.

A. $(x, y) \rightarrow (x + 3, y)$

B. $(x, y) \rightarrow (2x, 2y)$

C. $(x, y) \rightarrow (x, y + 4)$

D. $(x, y) \rightarrow (x, y - 4)$

E. $(x, y) \rightarrow (x - 3, y + 4)$

1. Translate by the directed line segment from (0, 0) to (0, 4).

2. Translate by the directed line segment from (0, 0) to (3, 0).

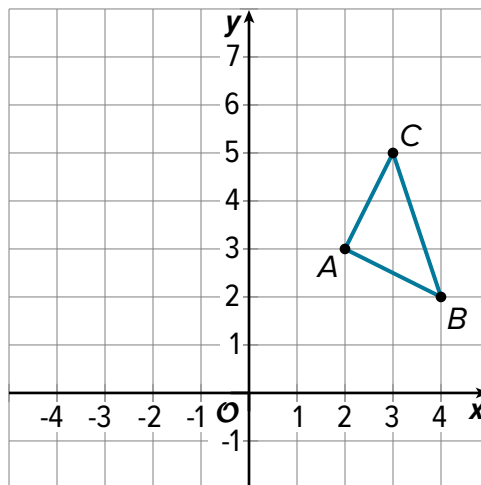**3.** Dilate using the origin as the center and a scale factor of 2.

4. Translate by the directed line segment from (0, 0) to (0, -4).

5. Translate by the directed line segment from (0, 0) to (-3, 4).

2. Respond to each question

a. Draw the image of triangle *ABC* under the transformation $(x, y) \rightarrow (x - 4, y + 1)$. Label the result *T*.

b. Draw the image of triangle *ABC* under the transformation $(x, y) \rightarrow (-x, y)$. Label the result *R*.

3. Here are some transformation rules. For each rule, describe whether the transformation is a rigid motion, a dilation, or neither.

    a. $(x, y) \rightarrow (x - 2, y - 3)$
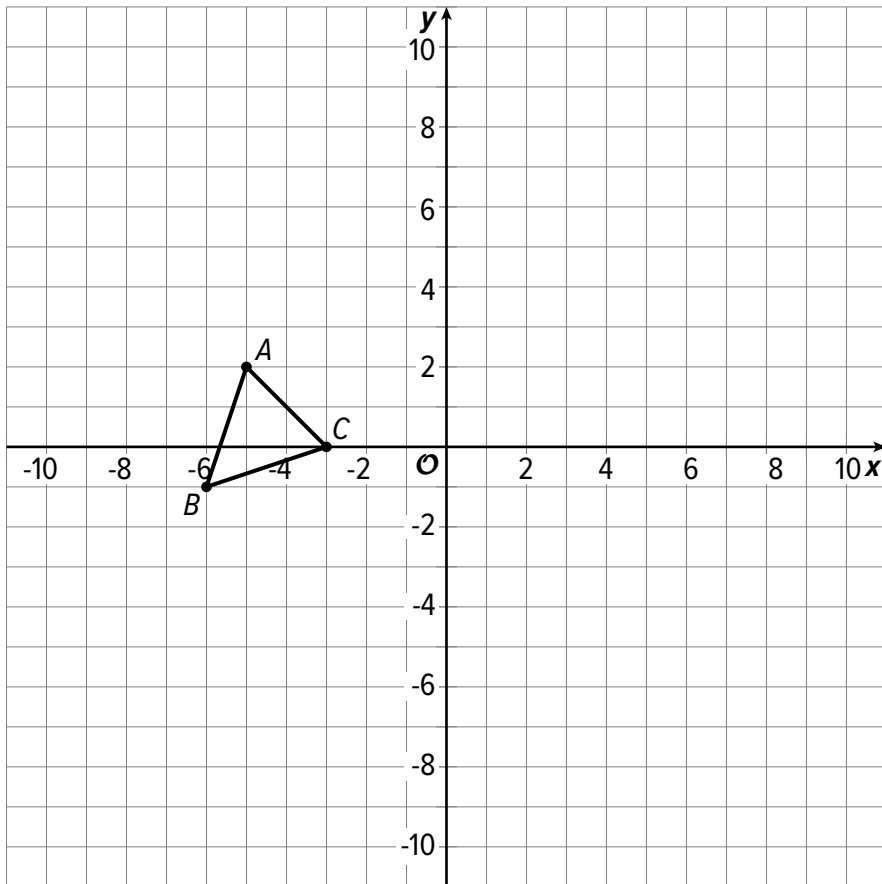
    b. $(x, y) \rightarrow (2x, 3y)$

    c. $(x, y) \rightarrow (3x, 3y)$

    d. $(x, y) \rightarrow (2 - x, y)$

5. Reflect triangle *ABC* over the line $y = 2$.

Translate the image by the directed line segment from (0, 0) to (3, 2).

What are the coordinates of the vertices in the final image? **(Lesson 6-1)**

Practice
Distances and Circles

1. Match each equation to its description.

   A. circle centered at (0, -4) with a radius of 3

   B. circle centered at (1, -4) with a radius of $\sqrt{3}$

   C. circle centered at (1, 4) with a radius of $\sqrt{3}$

   D. circle centered at (1, 0) with a radius of 3

   E. circle centered at (1, -4) with a radius of 3

   1. $(x-1)^2 + y^2 = 9$

   2. $x^2 + (y+4)^2 = 9$

   3. $(x-1)^2 + (y-4)^2 = 3$

   4. $(x-1)^2 + (y+4)^2 = 9$

   5. $(x-1)^2 + (y+4)^2 = 3$

2. Write an equation of a circle that is centered at (-3, 2) with a radius of 5.

   A. $(x-3)^2 + (y+2)^2 = 5$

   B. $(x+3)^2 + (y-2)^2 = 5$

   C. $(x-3)^2 + (y+2)^2 = 25$

   D. $(x+3)^2 + (y-2)^2 = 25$

6. Match each coordinate rule to a description of its resulting transformation. **(Lesson 6-2)**

A. $(x, y) \rightarrow (3x, 3y)$

B. $(x, y) \rightarrow (x - 3, y - 3)$

C. $(x, y) \rightarrow (x + 3, y + 3)$

D. $(x, y) \rightarrow (x - 3, y)$

E. $(x, y) \rightarrow (x + 3, y)$

F. $(x, y) \rightarrow (x, y - 3)$

G. $(x, y) \rightarrow (x, y + 3)$

1. Translate along the directed line segment from (0, 0) to (-3, 0).

2. Translate along the directed line segment from (0, 0) to (0, -3).

3. Translate along the directed line segment from (0, 0) to (3, 0).

4. Translate along the directed line segment from (0, 0) to (0, 3).

5. Translate along the directed line segment from (0, 0) to (3, 3).

6. Translate along the directed line segment from (0, 0) to (-3, -3).

7. Dilate using the origin as the center and a scale factor of 3.

Practice
Equations of Lines

1. Select **all** the equations that represent the graph shown.
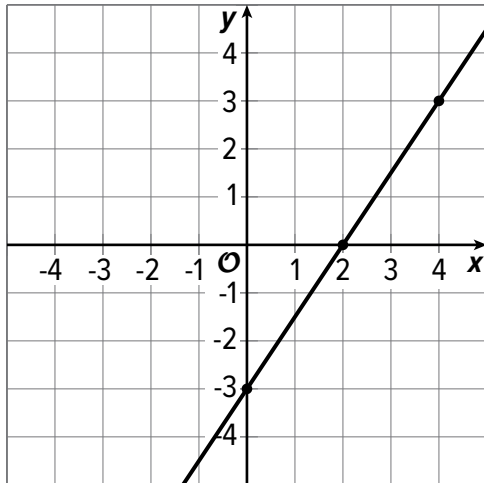
(A.) $3x - 2y = 6$

(B.) $y = \frac{3}{2}x + 3$

(C.) $y = \frac{3}{2}x - 3$

(D.) $y - 3 = \frac{3}{2}(x - 4)$

(E.) $y - 6 = \frac{3}{2}(x - 2)$

Practice
Parallel Lines in the Plane

1. Select **all** equations that are parallel to the line $2x + 5y = 8$.

(A.) $y = \frac{2}{5} x + 4$

(B.) $y = -\frac{2}{5} x + 4$

(C.) $y - 2 = \frac{5}{2} (x + 1)$

(D.) $y - 2 = -\frac{2}{5} (x + 1)$

(E.) $10x + 5y = 40$

Practice
Perpendicular Lines in the Plane

1. Write an equation for a line that passes through the origin and is perpendicular to $y = 5x - 2$.

Practice
It's All on the Line

1. For each equation, is the graph of the equation parallel to the line shown, perpendicular to the line shown, or neither?
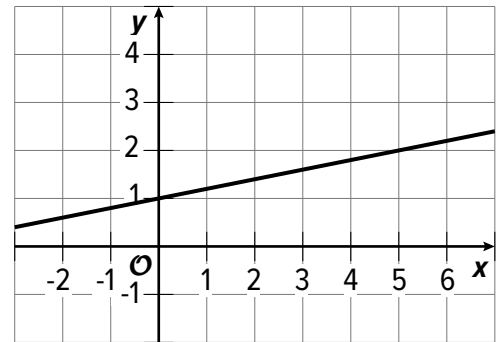
   a. $y = 0.2x$

   b. $y = -2x + 1$

   c. $y = 5x - 3$

   d. $(y - 3) = -5(x - 4)$

   e. $(y - 1) = 2(x - 3)$

   f. $5x + y = 3$

2. Select **all** equations whose graphs are lines perpendicular to the graph of $3x + 2y = 6$ **(Lesson 6-11)**

   A. $3x - 2y = 4$

   B. $2x + 3y = 6$

   C. $2x - 3y = 8$

   D. $(y - 4) = \frac{2}{3}(x - 6)$

   E. $(y - 2) = -\frac{3}{2}(x - 8)$

   F. $y = \frac{2}{3}x$

   G. $y = \frac{3}{2}x + 3$