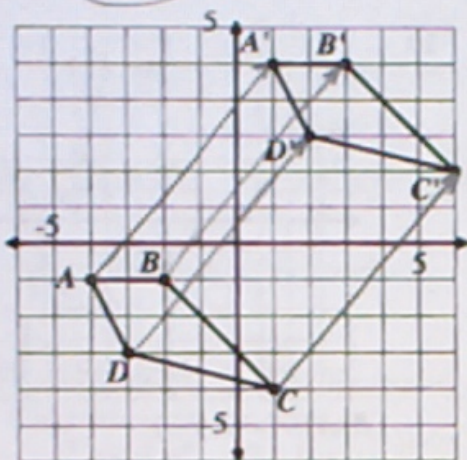


Mod 6 Transformations Review

Matching I - Match each image with the transformation that has taken place. (G.CO.4)

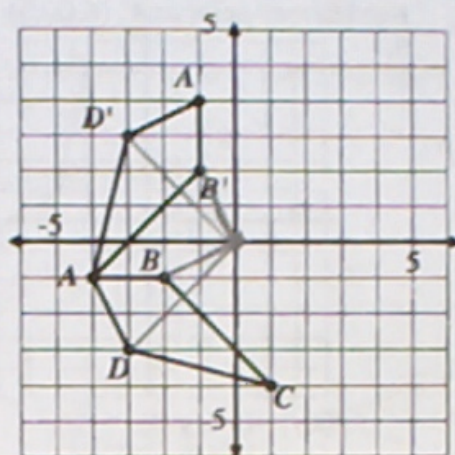
1.

B



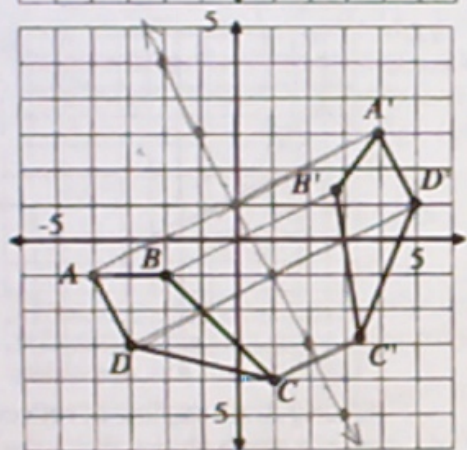
2.

C



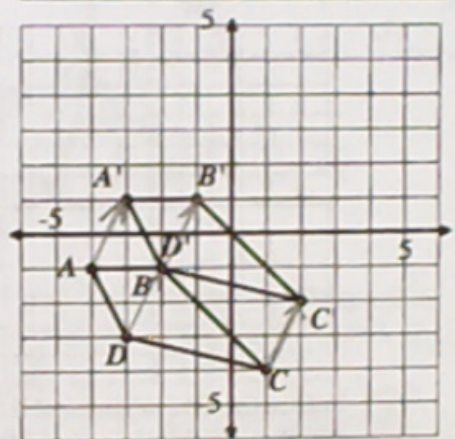
3.

A



4.

D



(A) Reflect across $y = -2x + 1$

(B) $f(x,y) \rightarrow (x+5, y+6)$

(C) Rotate 90° Clockwise around the point $(0, 0)$

(D) $f(x,y) \rightarrow (x+1, y+2)$

5. What transformations preserve distance and angles between the image and pre-image?

translations, rotations, & reflections

6. What transformations DO NOT preserve distance and angles between the image and pre-image?

dilations

7. Given the line $y = \frac{3}{4}x - 2$, which of the following lines would be parallel to the line?

a. $y = \frac{4}{3}x - 2$

b. $y = \frac{3}{4}x + 5$

c. $y = -\frac{4}{3}x - 5$

d. $\frac{3}{4}x - 2y = 5$

8. Given the line $y = \frac{3}{4}x - 2$, which of the following lines would be perpendicular to the line?

a. $y = \frac{4}{3}x - 2$

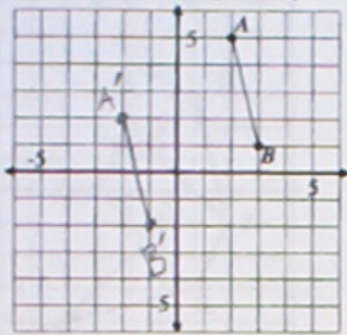
b. $y = \frac{3}{4}x + 5$

c. $y = -\frac{4}{3}x - 5$

d. $\frac{3}{4}x - 2y = 5$

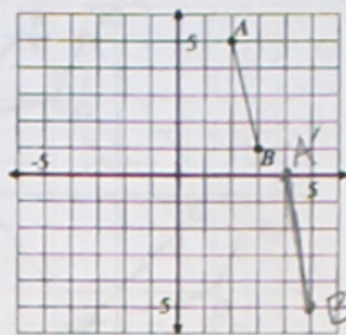
Perform the requested transformation. If you transform point A, make sure you label the transformed point as A' (G.CO.5)

9.



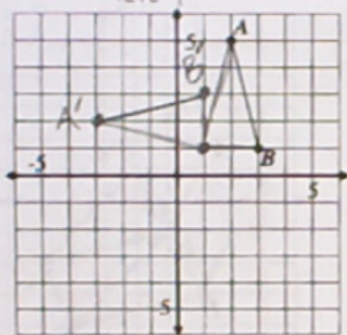
$f(x,y) \rightarrow (x-4, y-3)$
 left 4 down 3

10.



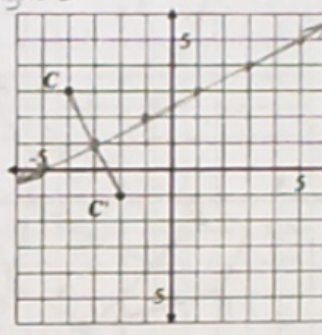
$f(x,y) \rightarrow (x+2, y-5)$
 right 2 down 5

11.



Rotate the line segment AB 90° counter-clockwise around the point (1, 1)

12.

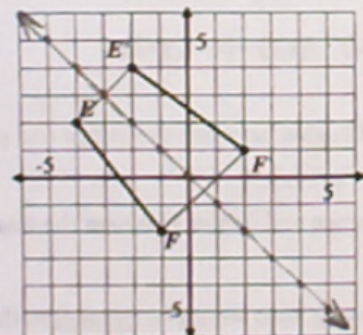


slope $\overline{CC'} = -2$
 slope LAR = $\frac{1}{2}$
 $y = \frac{1}{2}x + \frac{5}{2}$

Clearly draw the line of reflection on the graph above. Write the equation of the line.

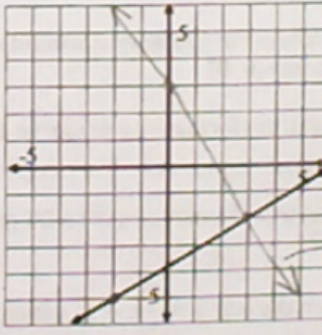
13.

Slope $\overline{EF} = +\frac{1}{2}$
 slope LAR = $-\frac{1}{2}$
 $y = -x$



Clearly draw the line of reflection on the graph above. Write the equation of the line.

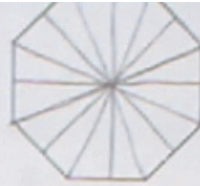
14.



$y = \frac{3}{5}x - \frac{19}{5}$
 $y = -\frac{5}{3}x + 3$

Graph a perpendicular line to the one shown above. Write the equation of both lines.

15. List **all** the angles of rotation up to 360° that will carry the figure onto itself. (G.CO.3)



$$\frac{360^\circ}{8} = 45^\circ$$

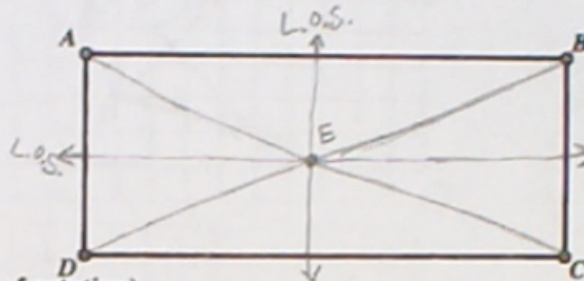
$45^\circ, 90^\circ, 135^\circ, 180^\circ,$
 $225^\circ, 270^\circ, 315^\circ, 360^\circ$

16. On the figure above, draw the lines of reflection (symmetry) that carry the figure onto itself.

17. How many lines of reflection (symmetry) are there? (G.CO.3) 8

For questions 16-18 use the rectangle.

18. Draw and label the lines of symmetry and the Diagonals on the rectangle



19. Using transformations, justify why $\overline{AB} \cong \overline{CD}$ (Be specific, reflections are defined by lines, rotations are defined by centers and degrees of rotation)

Rotate the rectangle 180° about point E
Because of rotational symmetry, $\overline{C'D'}$ coincides with \overline{AB}
and $\overline{A'B'}$ coincides with $\overline{C'D}$

So $\overline{AB} \cong \overline{CD}$

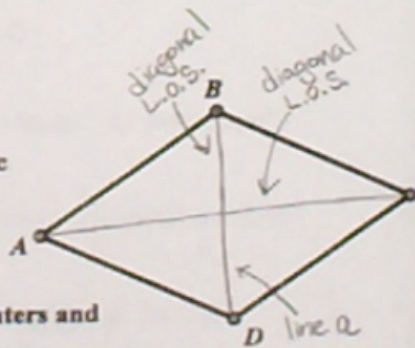
20. Using transformations, justify why diagonal \overline{BD} and \overline{AC} are congruent. (Be specific, reflections are defined by lines, rotations are defined by centers and degrees of rotation)

Rotate the rectangle 180° about point E
Because of rotational symmetry, $\overline{B'D'}$ coincides with \overline{AC}
and $\overline{A'C'}$ coincides with \overline{BD}

So $\overline{BD} \cong \overline{AC}$

For questions 19-21 use the rhombus.

21. Draw and label the lines of symmetry and the diagonals on the rhombus.



22. Using transformations, justify why $\angle A \cong \angle C$ (Be specific, reflections are defined by lines, rotations are defined by centers and degrees of rotation)

Reflect the rhombus over line a.
Because of reflectional symmetry, $\angle A'$ coincides with $\angle C'$
and $\angle C'$ coincides with $\angle A$

So $\angle A \cong \angle C$