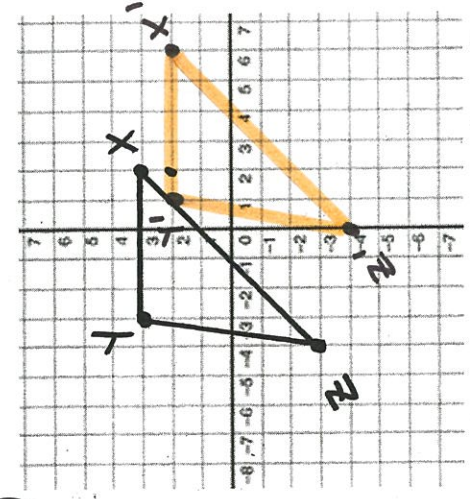


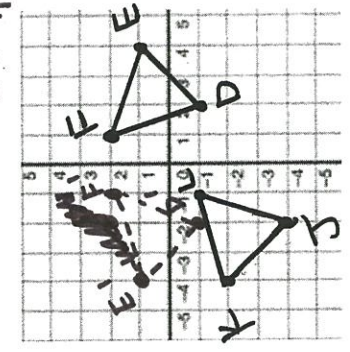
Chapter 4 Group Review

1. Graph $\triangle XYZ$ with vertices $X(2, 3)$, $Y(-3, 4)$, and $Z(-4, -3)$ and its image after the translation: $(x, y) \rightarrow (x + 4, y - 1)$

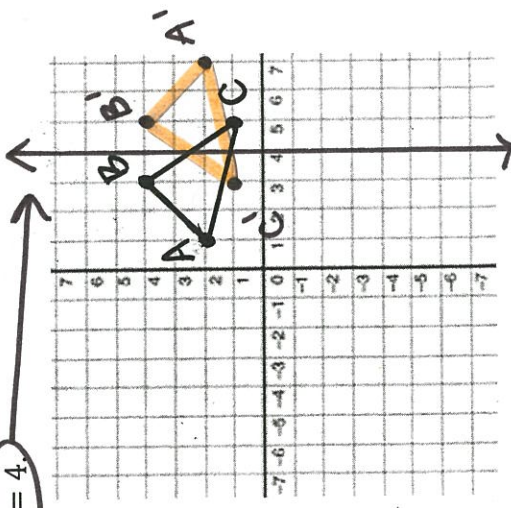


2. Describe a congruence transformation that maps $\triangle DEF$ onto $\triangle JKL$.

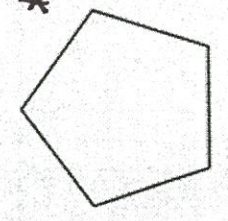
sample answer:
1 reflect $\triangle DEF$ in y-axis
2 translate 3 down



3. Graph the polygon's image after a reflection in the line $x = 4$.



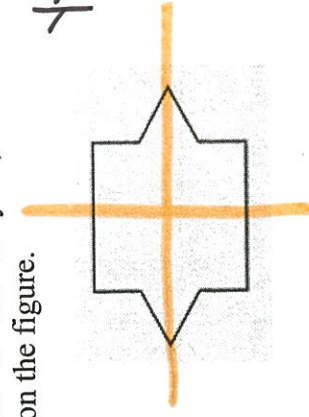
4. Determine whether the figure has rotational symmetry. Answer "yes" or "no." If "yes", determine ALL angles of rotational symmetry that will map the figure onto itself.



yes!
1/4 maps onto itself 5 times in a 360° rotation
12/5 360

72°, 144°, 216°, 288°

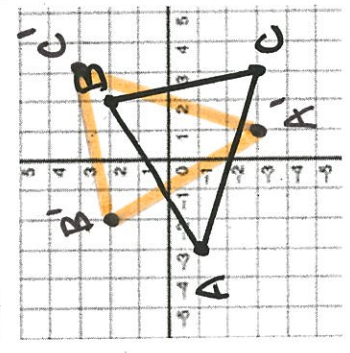
5. Determine whether the figure has line symmetry. Answer "yes" or "no." If "yes", draw ALL line of symmetry on the figure.



yes!

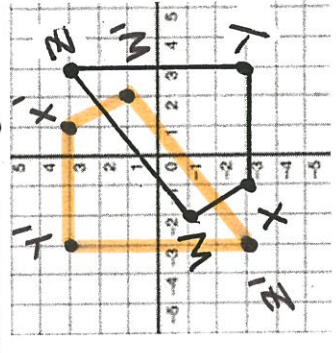
6. Graph $\triangle ABC$ and its image after a 90° rotation about the origin.

$(x, y) \rightarrow (-y, x)$



7. Graph quadrilateral WXYZ and its image after a 180° rotation about the origin.

$(x, y) \rightarrow (-x, -y)$



8. A 270° rotation clockwise is the same as a 90° rotation counterclockwise.

9. A 180° rotation clockwise is the same as a 180° rotation counterclockwise.

10. A 90° rotation clockwise is the same as a 270° rotation counterclockwise.

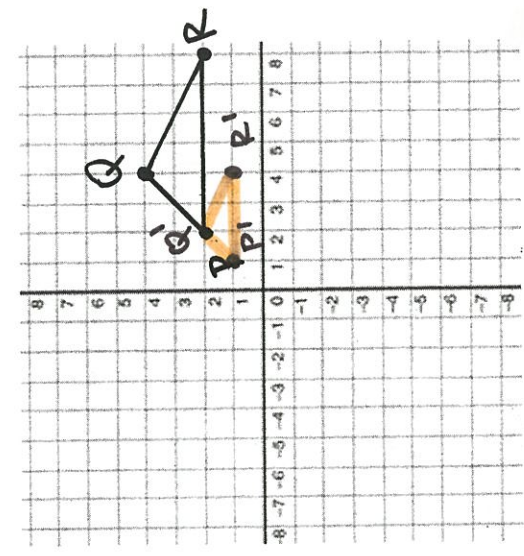
11. Performing two reflections in parallel lines results in the transformation (circle one):

Rotation
Dilation
Translation
Reflection

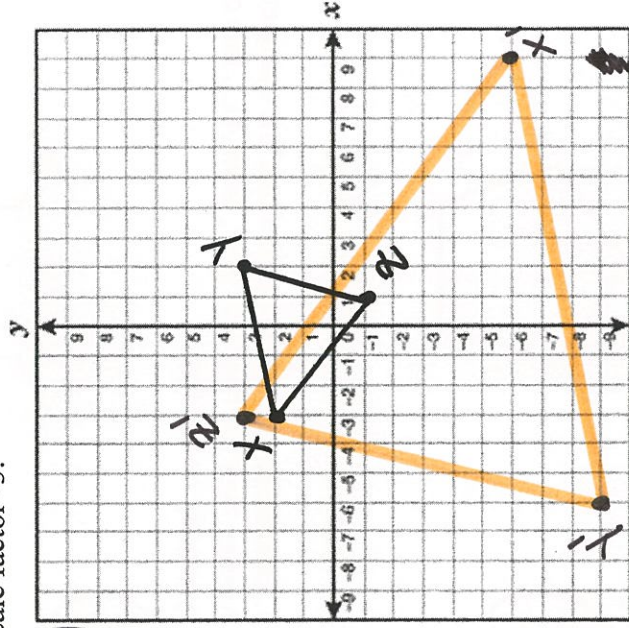
12. Performing two reflections in intersecting lines results in the transformation (circle one):

Rotation
Dilation
Translation
Reflection

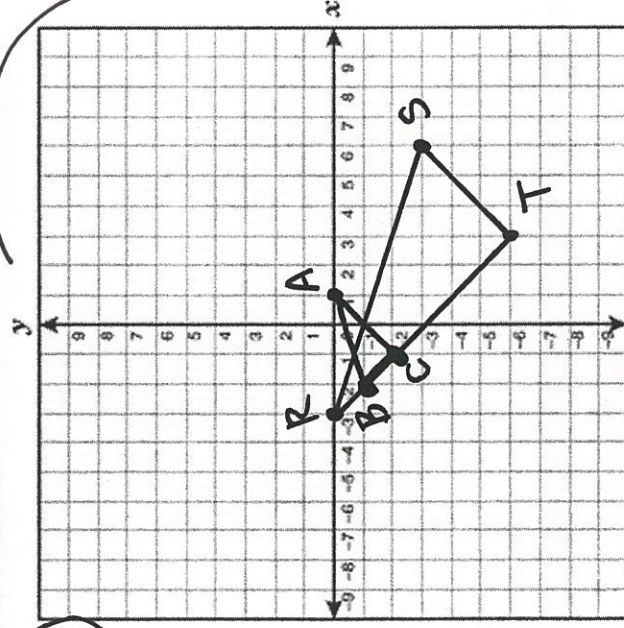
13. Graph $\triangle PQR$ and its image after the dilation with scale factor of 1/2



14. Graph $\triangle XYZ$ and its image after the dilation with scale factor -3.



15. Describe a similarity transformation that maps $\triangle ABC$ to $\triangle RST$.



16. You are using a magnifying glass that shows the image of an object that is 8 times the object's actual size. The image length is 152 cm. Find the actual length of the object.

$k = 8$ $k = \frac{\text{image}}{\text{preimage}}$
 $x = 1.9$ $8 = \frac{15.2}{x}$
 1.9 cm $8x = 15.2$

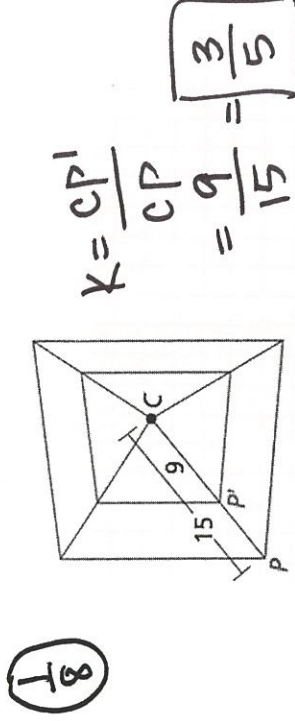
17. Name ALL transformations that are rigid motions:

- ① translation
 ② reflection
 ③ rotation

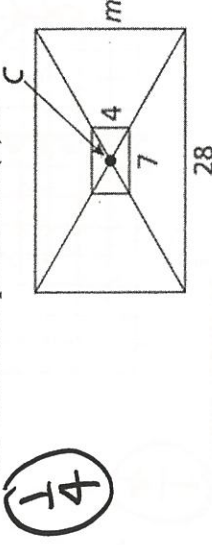
18. Name ALL transformations that are nonrigid motions:

- ① dilation

19. Find the scale factor of the dilation.



20. What is the scale factor (k) of the figure below if the dilation represents a(n)...



- a. enlargement? $k = \frac{28}{7} = 4$

- b. reduction? $k = \frac{7}{28} = \frac{1}{4}$

21. Use the figure from #20 to find the value of m .

$\frac{1}{4}$
 $\frac{1}{4} = \frac{4}{m}$
 $\frac{m}{4} = 4$
 $m = 16$

sample answer:

- ① reflect in y-axis
 ② dilate $k = 3$