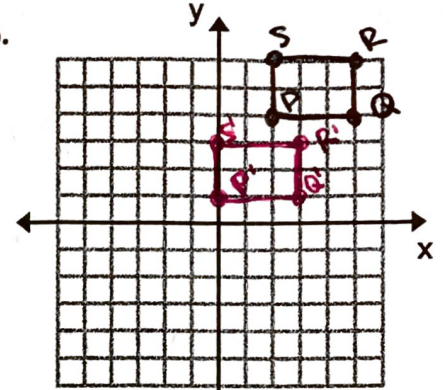


Chapter 8 REVIEW

Exercises 1-2, rectangle $PQRS$ has coordinates $P(2, 4)$, $Q(5, 4)$, $R(5, 6)$, and $S(2, 6)$.

- Graph $PQRS$ and the image of $PQRS$ after a translation of 2 units left and 3 units down.
- List the coordinates of $P'Q'R'S'$.

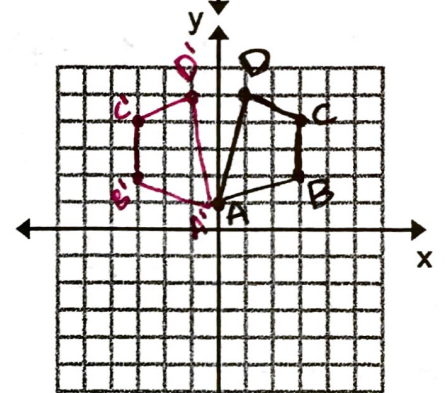
$P'(0, 1)$ $Q'(3, 1)$ $R'(3, 3)$ $S'(0, 3)$



For exercises 3-4 quadrilateral $ABCD$ has coordinates $A(0, 1)$, $B(3, 2)$, $C(3, 4)$, & $D(1, 5)$.

- Graph $ABCD$ and the image of $ABCD$ after a reflection over the y -axis on a coordinate grid. Label the image $A'B'C'D'$.
- List the coordinates of $A'B'C'D'$.

$A'(0, 1)$ $B'(-3, 2)$ $C'(-3, 4)$ $D'(-1, 5)$

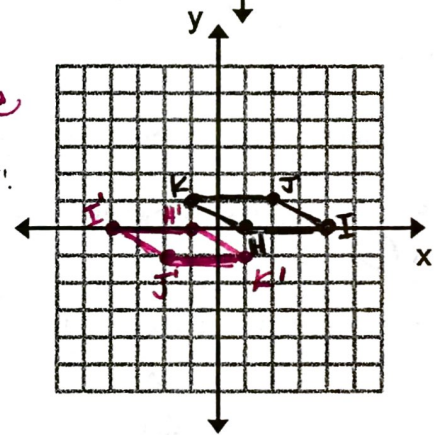


For exercises 5-6, parallelogram $HIJK$ has coordinates $H(1, 0)$, $I(4, 0)$, $J(2, 1)$, and $K(-1, 1)$.

- Graph $HIJK$ and the image of $HIJK$ after a clockwise rotation of 180° . Label it $H'I'J'K'$.
- List the coordinates of $H'I'J'K'$.

$H'(-1, 0)$ $I'(-4, 0)$ $J'(-2, 1)$ $K'(1, 1)$

around origin



7. Using the quadrilateral $T(-3, 1)$, $U(2, 2)$, $V(2, 4)$, and $W(-3, 3)$, give the coordinates of the vertices for quadrilateral $T'U'V'W'$ after a dilation with a scale factor of $\frac{1}{2}$.

$T'(-\frac{3}{2}, \frac{1}{2})$ $U'(1, 1)$ $V'(1, 2)$ $W'(-\frac{3}{2}, \frac{3}{2})$

Use the triangle PQR for exercises 8-10.

8. If the figure is translated 6 units down and 2 units left, what are the coordinates of R' ?

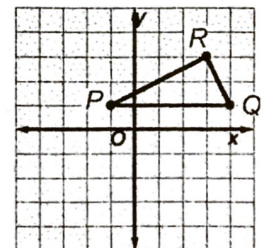
$R'(1, -3)$

9. If the figure is rotated 270° clockwise about the origin, what are the coordinates of Q' ?

$Q'(-1, 4)$

10. If the figure is reflected over the y -axis, what are the coordinates of P' ?

$P'(1, 1)$



For exercises 11-14 graph the quadrilateral WXYZ with vertices $W(-4, 4)$, $X(-4, 1)$, $Y(-1, 1)$, and $Z(-1, 4)$.

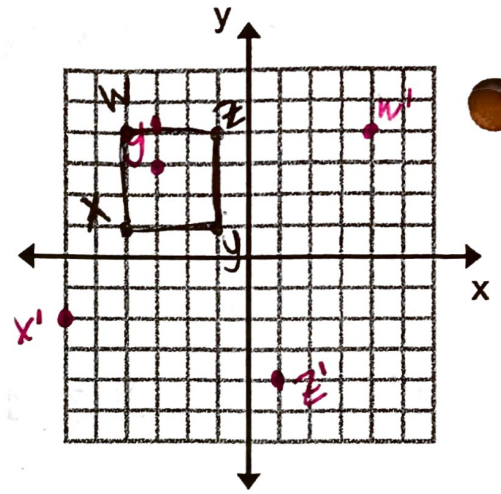
Then graph only the vertices indicated for each of the following questions

11. Graph and state the coordinates of the image of point Y after a dilation with a scale factor of 3?
 $Y'(-3, 3)$

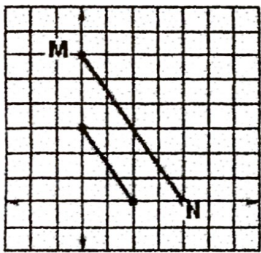
12. Graph and state the coordinates of the image of point X after a translation 2 units to the left and 3 units down?
 $X'(-6, -2)$

13. Graph and state the coordinates of the image of point W after a reflection across the y-axis?
 $W'(4, 4)$

14. Graph and state the coordinates of the image of point Z after it is rotated 180° clockwise about the origin?
 $Z'(1, -4)$

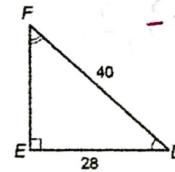
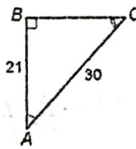


15. The graph below shows segment $M'N'$ is a dilation of segment MN . What is the scale factor of the dilation?



$k = \frac{1}{2}$

16. The triangles below are similar. Which series of transformations maps $\triangle ABC$ onto $\triangle DEF$?
 (Be specific)

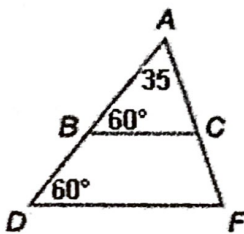


- rotation 90° CCW

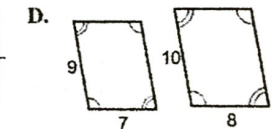
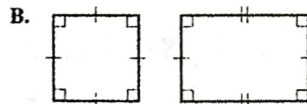
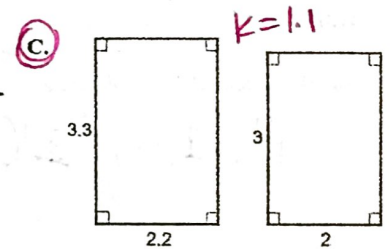
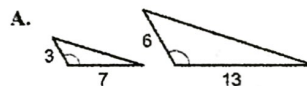
- Dilate $k = \frac{4}{3}$

17. Which statement about the figures below are true?

- F F. $\angle ACB$ is congruent to $\angle ADF$
- T **C**. $\triangle ABC$ is similar to $\triangle ADF$
- F H. $\angle ABC$ is similar to $\angle AFD$
- F I. $\triangle ABC$ is congruent to $\triangle ADF$



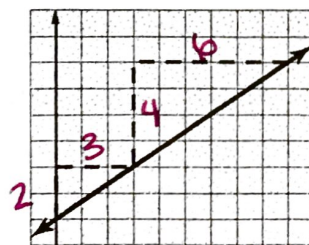
18. Which pair of polygons are similar?



19. Which of the following statements is not true if $\triangle JKL$ is congruent to $\triangle RST$?

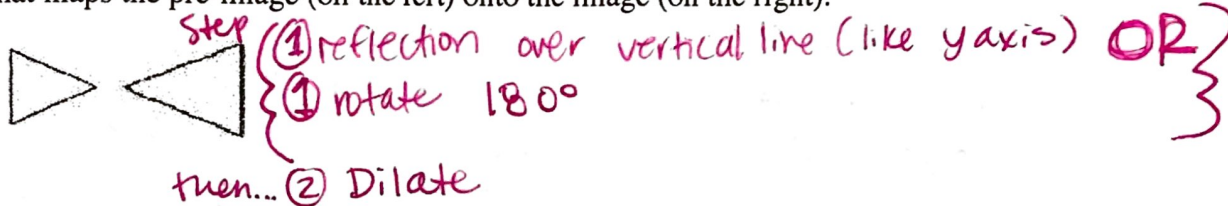
- T A. $\angle J \cong \angle R$
- T B. $\overline{JK} \cong \overline{RS}$
- F **C**. $\angle K \cong \angle T$
- T D. $\overline{KL} \cong \overline{ST}$

20. Write a proportion comparing the rise to the run for each of the similar slope triangles shown below. Then find the numeric value.



SLOPE = $\frac{2}{3}$ (reduced form)
 $\frac{2}{3} = \frac{4}{6}$

21. The triangles in the figure below are similar. Describe the **specific details** for the series of transformations that maps the pre-image (on the left) onto the image (on the right).



22. Write congruence statements comparing the corresponding parts in the set of congruent figures below. Then determine which transformation took place to map $\triangle ABC$ onto $\triangle DEF$

ANGLES

SIDES

$\angle A \cong \angle D$

$\overline{AB} \cong \overline{DE}$

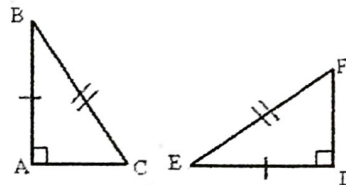
$\angle B \cong \angle E$

$\overline{BC} \cong \overline{EF}$

$\angle C \cong \angle F$

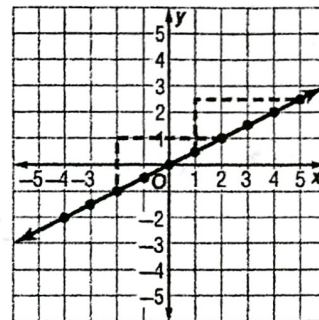
$\overline{CA} \cong \overline{FD}$

rotation 90° CCW
translate to the right



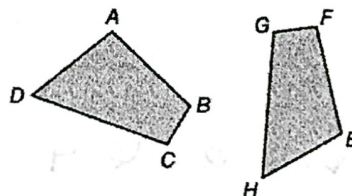
23. Which of the following statements is *not* true about the graph shown?

- T A. The simplified ratio of the rise to the run of each triangle is $\frac{1}{2}$.
- T B. The slope of the line is $\frac{1}{2}$.
- F C. The slope of the line is $-\frac{1}{2}$.
- T D. The two triangles shown are similar

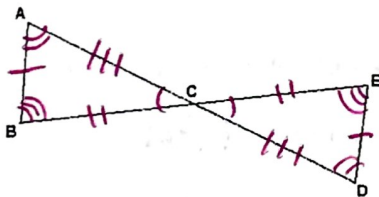


24. Which series of transformations maps figure ABCD onto EFGH?

- ~~F.~~ rotation followed by a translation
- ~~G.~~ rotation followed by a dilation
- ~~H.~~ reflection followed by a translation
- L.** reflection followed by a rotation



25. Triangle ABC is congruent to triangle DEC. Draw arc and tic marks to identify the corresponding parts.



For exercises 26-28 use triangle PQR with vertices at P(0, 0), Q(2, 0), and R(0, 2).

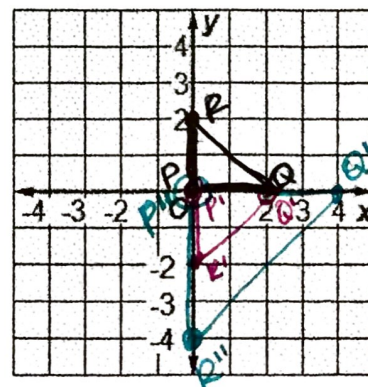
26. Graph $\triangle PQR$.

27. Reflect $\triangle PQR$ over the x-axis, then dilate it by a scale factor of 2. Label the vertices of the image $P''Q''R''$.

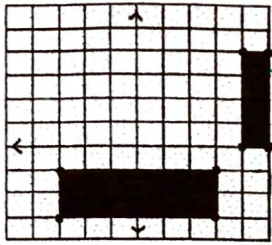
$P''(0,0)$ $Q''(4,0)$ $R''(0,-4)$

28. Are $\triangle PQR$ and $\triangle P''Q''R''$ congruent? Justify your response.

NO, a dilation took place,
so side lengths are NOT \cong .

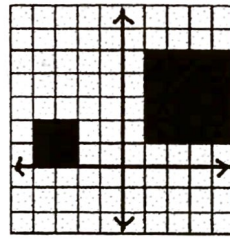


29. Determine if the two figures are similar by using transformations. Explain your reasoning



NOT similar,
 → sides are NOT
 proportional.
 → $\frac{1}{2} \neq \frac{4}{6}$

30. Determine if the two figures are similar by using transformations. Explain your reasoning.

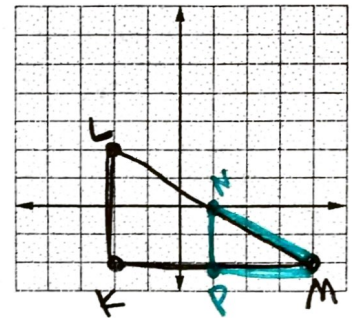


Yes, a translation +
 a dilation would
 take one square on top
 of the other.

31. Triangle LKM has vertices L(-2,2), K(-2,-2) and M(4,-2). Triangle NPM has vertices N(1,0), P(1,-2) and M(4,-2). Graph each pair of similar triangles. Then write a proportion comparing the rise to the run for each of the similar slope triangles and find the numeric value.

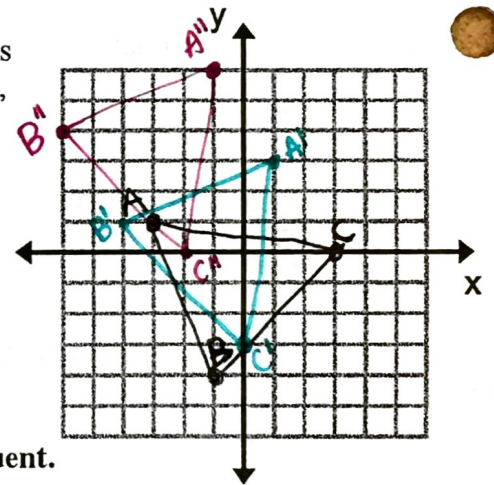
$$\frac{-4}{6} = \frac{-2}{3}$$

→ Slope = $\boxed{\frac{-2}{3}}$

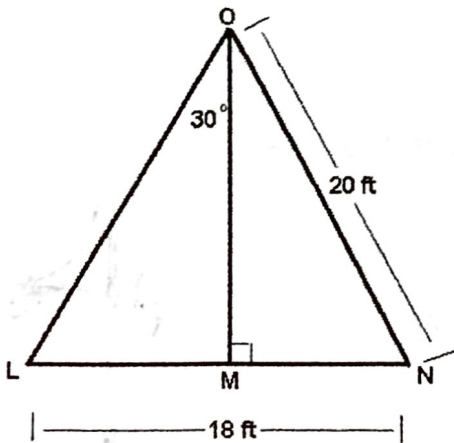


32. Triangle ABC has points A(-3,1), B(-1,-4) and C(3,0). Find the coordinates of the final image of the triangle after a 90° clockwise rotation about the origin, and then a translation of 3 units up and 2 units to the left.

$A''(-1, 6)$ $B''(-6, 4)$ $C''(-2, 0)$



For exercises 33-35 use triangles LMO and NMO below, which are congruent.



33. Find MN. *9 feet*

34. Find OL. *20 feet*

35. Find $\angle N$. *60°*

36. Find MO (use pythagorean theorem to find)
17.9 feet