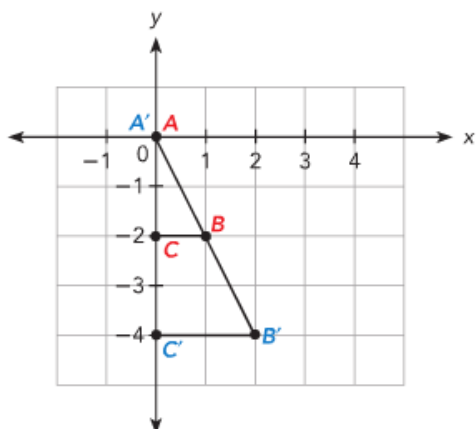


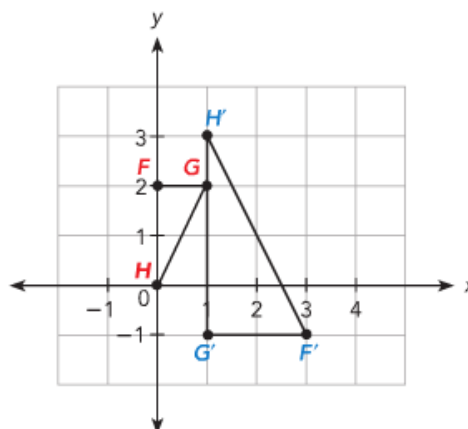
Practice 8.4

Tell whether each transformation is a dilation. Explain.

1



2



Solve. Show your work.

- 3 Nikita wants to make a mosaic for a T-shirt's design. She makes some dilated copies of a drawing with a photocopier. The drawing is 6 inches by 4 inches. Find the length and width of each copy with the scale factor given in **a)** to **d)**. State whether each copy is an enlargement or reduction of the drawing.

a) 1.5

b) 2

c) $\frac{1}{4}$

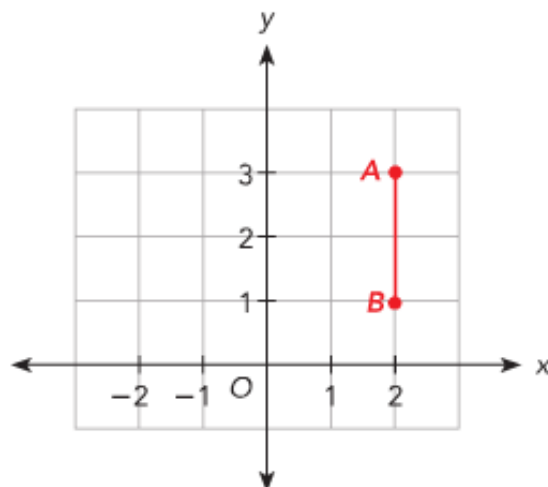
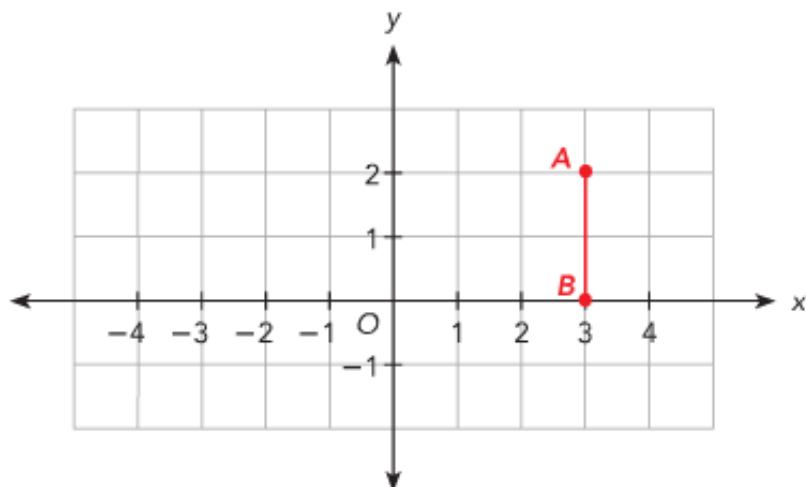
d) 140%

Copy and complete on graph paper.

- 4 Timothy uses a lens to view a 2-inch pencil that is represented by \overline{AB} on the coordinate plane. \overline{AB} is mapped onto $\overline{A'B'}$ by a dilation with center at the origin, O . Draw each image for the given scale factor.

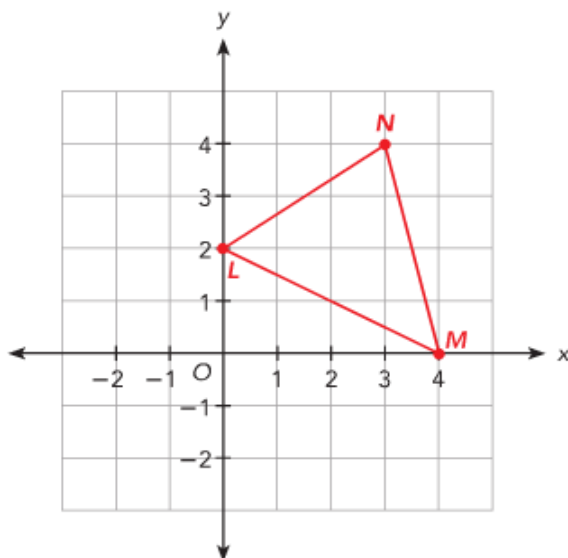
a) Scale factor -0.5

b) Scale factor 0.5

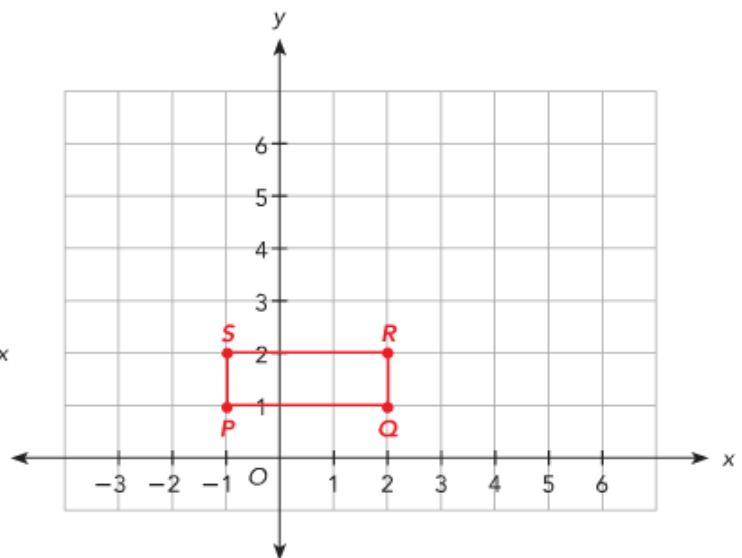


- 5 Each figure is each mapped onto its image by a dilation with its center at the origin, O . On a copy of the coordinate plane, draw each image.

- a) Triangle LMN is mapped onto triangle $L'M'N'$ with scale factor $-\frac{1}{2}$



- b) Rectangle $PQRS$ is mapped onto rectangle $P'Q'R'S'$ with scale factor 3



Solve on graph paper. Show your work.

- 6 In a room, a flashlight is used to illuminate objects and cast their shadows on a wall. Each shadow is a dilation of the object's profile.

- a) A point $(4, 2)$ is mapped onto its shadow at $(6, 3)$ with the origin as the center of dilation. Find the scale factor.
- b) A point is at $(2, 2)$ and its shadow is at $(6, 2)$. The scale factor of the dilation is 3. Find the center of dilation.


- 7 Each figure is mapped into its image by a dilation. Draw each figure and its image on the coordinate plane. Then mark and label C as the center of dilation. Find the scale factor for each figure. Use 1 grid square on both axes to represent 1 unit for the interval from -8 to 6 .

- a) Quadrilateral $WXYZ$

Original Point	$W(-2, -1)$	$X(-1, -1)$	$Y(-1, 1)$	$Z(-2, 1)$
Is Mapped Onto	$W'(-6.5, 0.5)$	$X'(-4, 0.5)$	$Y'(-4, 5.5)$	$Z'(-6.5, 5.5)$

- b) Triangle PQR

Original Point	$P(3, 1)$	$Q(5, -2)$	$R(6, 4)$
Is Mapped Onto	$P'(0, 2.5)$	$Q'(-1, 4)$	$R'(-1.5, 1)$

- 8  **Math Journal** What are the invariant points of a dilation? Explain.