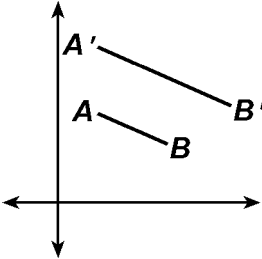


Name: _____

CC Geometry

Dilations Practice

- 1) $\triangle CAT$ is the image of $\triangle DOG$ under a dilation of scale factor 6. Which one of the following statements is true?
- A) $CA = 6(DO)$
 B) $6(CA) = DO$
 C) $6(m\angle O) = m\angle A$
 D) $m\angle O = 6(m\angle A)$
- 2) Which transformation represents a dilation?
- A) $(8,4) \rightarrow (-8,4)$
 B) $(8,4) \rightarrow (4,2)$
 C) $(8,4) \rightarrow (-4,-8)$
 D) $(8,4) \rightarrow (11,7)$
- 3) What are the coordinates of the point $(2,-4)$ under the dilation D_{-2} ?
- A) $(8,-4)$ C) $(-8,4)$
 B) $(-4,8)$ D) $(4,-8)$
- 4) The accompanying diagram shows segment $A'B'$, the image of segment AB under a dilation of scale factor k .
- 
- 5) $\triangle ABC$ was dilated through the origin with a scale factor of k . After the dilation, $\triangle ABC$ was congruent to its image $\triangle A'B'C'$. What do these results show about the value of k ?
- A) $0 < k < 1$ C) $k > 1$
 B) $k = 1$ D) $k < 0$
- 6) If the dilation $D_k(-2,4)$ equals $(1,-2)$, the scale factor k is equal to
- A) $-\frac{1}{2}$ C) 2
 B) $\frac{1}{2}$ D) -2
- 7) Under a dilation with respect to the origin, the image of $P(-15,6)$ is $P'(-5,2)$. What is the scale of dilation?
- A) 10 C) -4
 B) 3 D) $\frac{1}{3}$
- 8) In which quadrant would the image of point $(5,-3)$ fall after a dilation using a factor of -3 ?
- A) I C) III
 B) II D) IV

What is true about the value of k ?

- A) $k < 0$ C) $k > 1$
 B) $0 < k < 1$ D) $k = 1$

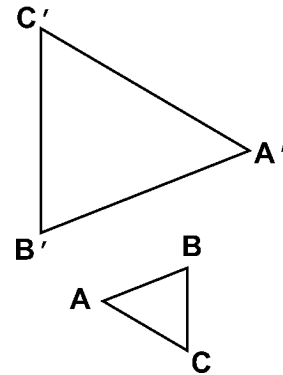
- 9) Is the following transformation a dilation? Explain your answer.

$$A(0,4), B(3,3), C(0,5) \longrightarrow A'(0,20), B'(15,15), C'(5,25)$$

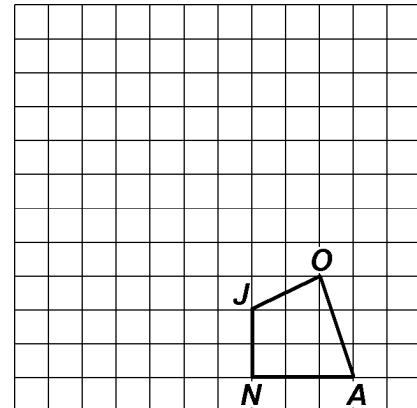
- 10) A' is the image of A under a dilation with center P . Find the scale factor of this dilation if $PA = 3$ and $PA' = 12$.

- 11) Determine the scale factor that was used in the following situations:
- A rectangle with side lengths of 4 and 6 is dilated to form a new rectangle with side lengths of 6.8 and 10.2. [*Show all work.*]
 - A triangle with side lengths of 0.8, 0.5, and 0.4 was formed by applying a dilation to a triangle with side lengths of 6.4, 4.0, and 3.2. [*Show all work.*]
 - A 14 cm-long line undergoes *no* change to its length or position after a dilation. [*Show all work.*]

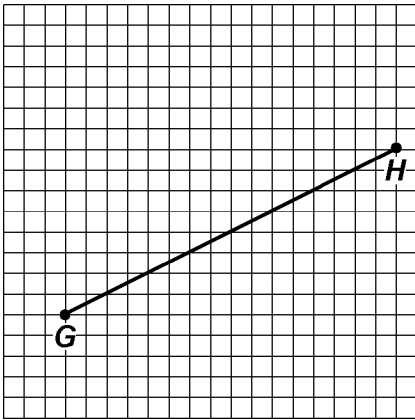
- 12) In the accompanying diagram, $\triangle A'B'C'$ is the image of $\triangle ABC$ under a dilation whose center is point P . Construct the center of dilation P .



- 13) Using point A as the center, dilate figure $JOAN$ with a scale factor of 3. Label the image $J'O'AN'$.

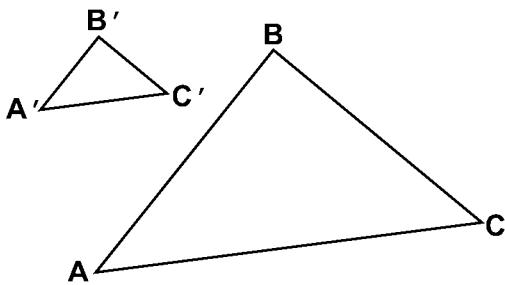


- 14) (a) In the diagram below, perform a dilation on line \overline{GH} using point G as the center and a scale factor of 0.25. [Label the image $\overline{G'H'}$.]



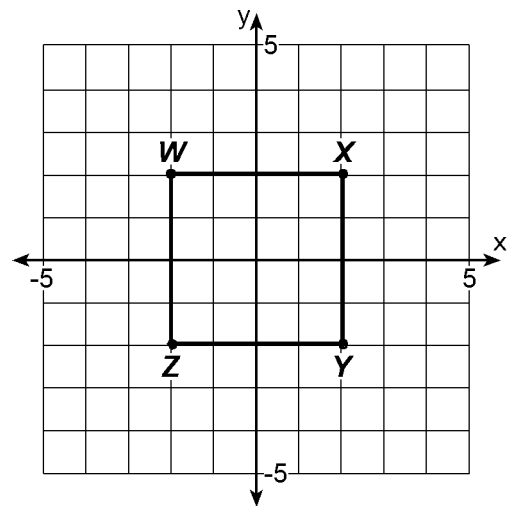
- (b) The original line and the image share one point in common. What is that point?
- (c) Describe the placement of the line and its image.

- 15) In the accompanying diagram $\triangle A'B'C'$ is the image of $\triangle ABC$ under a dilation whose center is point P . Construct the center of dilation P .

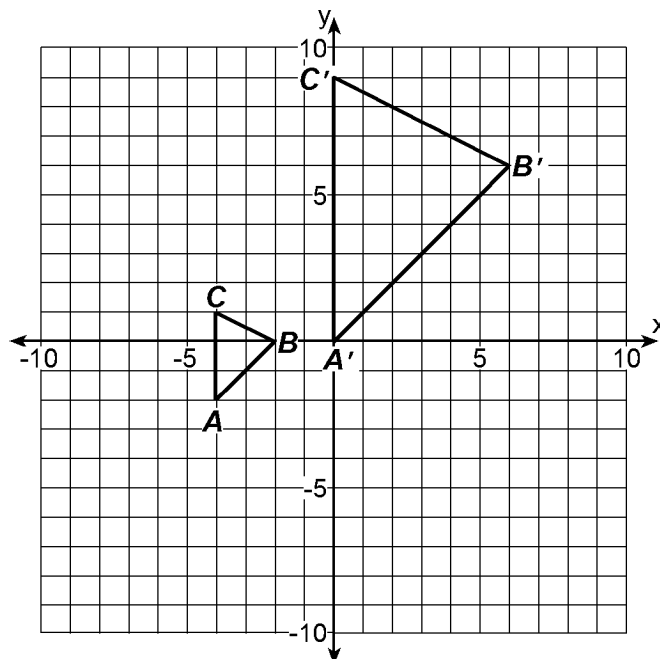


- 16) Under a dilation with constant of dilation k , the image of the point $(18,12)$ is $(6,4)$. What is the value of k ?

- 17) Dilate square $WXYZ$ with a scale factor of -2 . Use the origin for the center of dilation and label the image appropriately.



- 18) Triangle $A'B'C'$ is the image of triangle ABC after a dilation.



Determine the coordinates of the center of dilation and the scale of dilation.

1) A 2) B 3) B 4) C 5) B

6) A 7) D 8) B

9) no

SAMPLE ANSWER. $C(0,5) \rightarrow C'(5,25)$ is incorrect and should be $C(0,5) \rightarrow C'(0,25)$.

10) 4

11) (a) 1.7

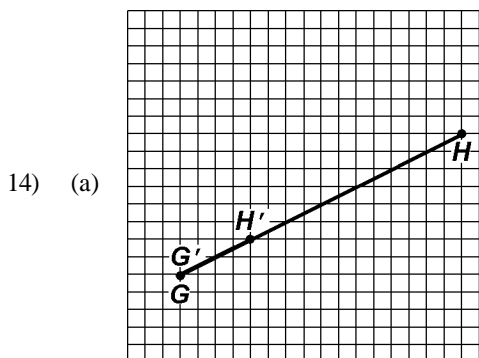
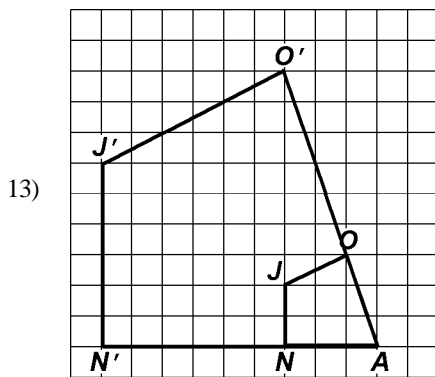
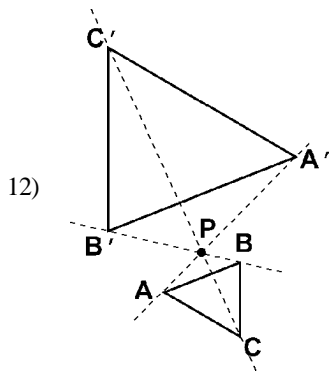
WORK SHOWN: $\frac{6.8}{4.0} = 1.7, \frac{10.2}{6.0} = 1.7;$

(b) 0.125

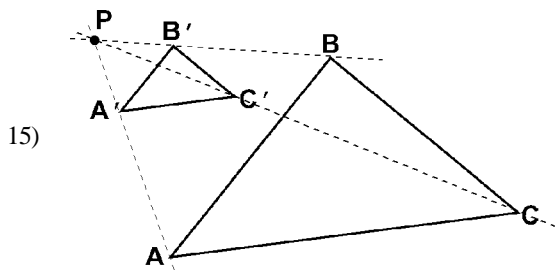
WORK SHOWN: $\frac{0.8}{6.4} = 0.125, \frac{0.5}{4.0} = 0.125, \frac{0.4}{3.2} = 0.125;$

(c) 1

WORK SHOWN: $\frac{14}{14} = 1$



- (b) Point G and point G' are the same.;
- (c) They overlap with one common endpoint.



16) $\frac{1}{3}$

17) $W'(4,-4)$, $X'(-4,-4)$, $Y'(-4,4)$, and $Z'(4,4)$

18) $(-6,-3)$; 3