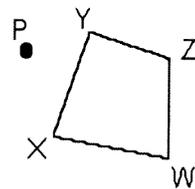


Unit K Review: Similarity

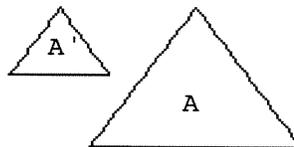
1. Draw the image of WXYZ under a size change of with center P, magnitude $\frac{1}{2}$. 1)



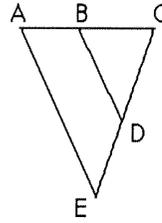
2. Draw the image of XYZW under a size change with center P and magnitude 3. 2)



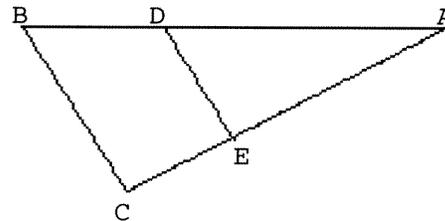
3. For the figures below, A' is the image of A. 3)
- a. Determine the center for the size transformation.
- b. Determine the scale-factor, k, for the size transformation. b) _____



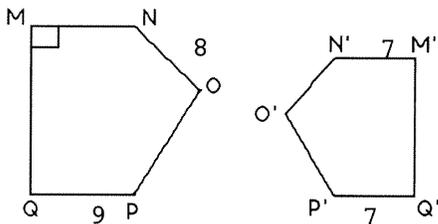
4. $\triangle BCD \sim \triangle ACE$. If $CD = 6$, $BD = 7$, and $AE = 10$, find CE to the nearest tenth. 4) _____



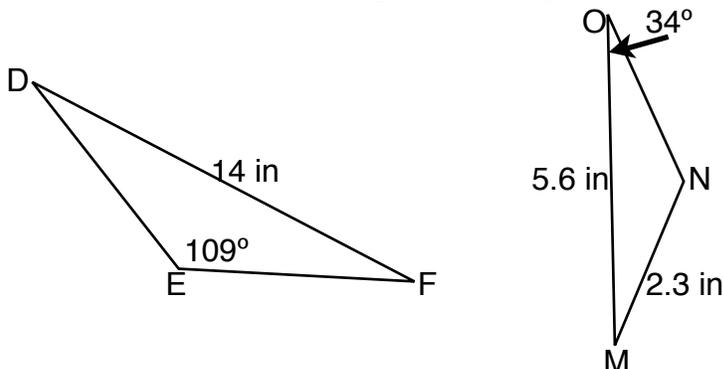
5. Let S be the size change such that $S_k(\triangle ABC) = \triangle ADE$. 5) a) _____
 a. Is this size change an expansion or a contraction? b) _____
 b. What is the value of k in this size change?



6. $MNOPQ \sim M'N'O'P'Q'$, with sides and angle measures as indicated below. Find as many missing lengths and angle measures as possible. 6) _____



7. $\triangle DEF \sim \triangle MNO$ with angle measures and sides as indicated. Find as many other lengths and angles as possible. 7) _____



Name: _____ Date: _____ Hour: _____

8. **Multiple Choice.** Size changes do **not** preserve... 8) _____

A. collinearity . C. angle measure.

B. betweenness. D. volume.

9. A painting is 24 inches wide and 33 inches high. A reproduction, which is similar to the original, is 19 inches wide. How high is the reproduction?

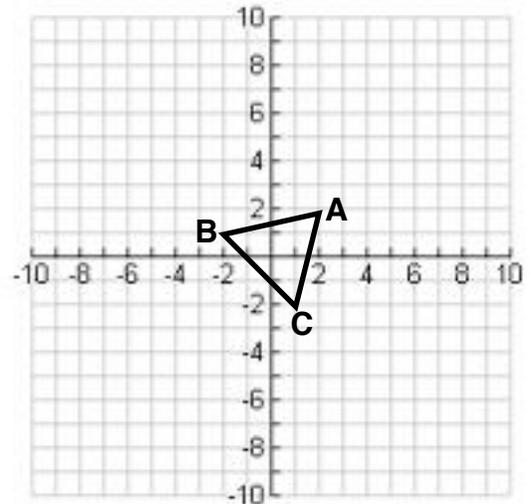
10. George Costanza paid \$23.68 for 8 gallons of gasoline. How much would she have to pay for a whole tankful if her tank holds 25 gallons?

11. a. On the coordinate axes to the right, graph the image of $\triangle ABC$ under $S_{2.5}$ and give the coordinates of the new vertices.

A' = _____

B' = _____

C' = _____



b. What is $S_{0.25}(C)$? _____

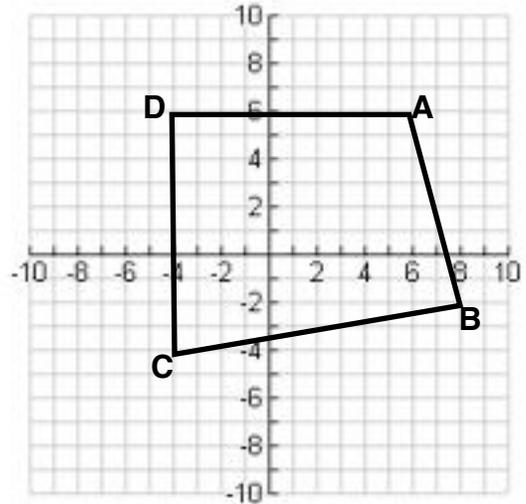
12. A photo measures 5" by 7". If the shorter dimension of a similar photo is 10", what is the longer dimension?

13. a. On the coordinate axes to the right, graph the image of ABCD under $S_{0,5}$ and give the coordinates of the new vertices.

$A' =$ _____ $B' =$ _____

$C' =$ _____ $D' =$ _____

- b. Show that the distance between A and C is half of the distance between A' and D'



14. If $\frac{a}{b} = \frac{c}{d}$, find c .

14) _____

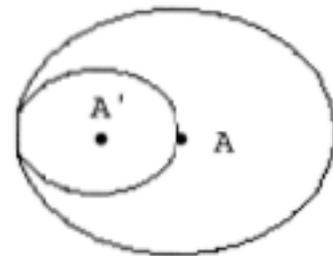
15. **True or False.** A size change does not preserve angle measure.

15) _____

16. For the figures below, A' is the image of A.

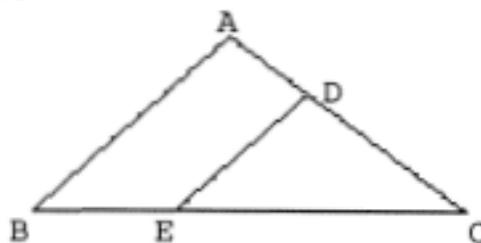
- a. Determine the center for the size change.
 b. Determine the scale factor, k , for the size change.

$k =$ _____



17. Let S be the size change such that $S_k(\triangle DEC) = \triangle ABC$.

- a. Is this size change an expansion or a contraction?
 b. What is the value of k in this size change?



Name: _____ Date: _____ Hour: _____

18. An octagon has area 225 in^2 and longest side 16 in. A similar octagon has longest side 8 in. What is the area of the similar octagon?

19. Two figures are similar and the ratio of their areas is 4:1. What is the ratio of the corresponding sides?

20. It takes 1 yd^2 of fabric to make a teddy bear 16 inches tall. How much fabric would it take to make a similar teddy bear 24 inches tall?

21. A trophy 12" tall weighs 13 ounces. How much would a similar trophy 10" tall weigh?

22. A hexagon has an area 90 in^2 and shortest side length 5 in. A similar hexagon has shortest side of length 4 in. What is the area of the similar hexagon?

23. If a 12-inch pizza costs \$9.50, at the same cost per square inch, what should a 14-inch pizza of the same thickness with the same ingredients cost?