Multiple Choice

1. Which of the following describes the image of a square after a dilation that has a scale factor of 2?
   A. Its sides are 2 units longer than those of the original square.
   B. Its sides are \( \frac{1}{2} \) as long as those of the original square.
   C. Its sides are 2 times as long as those of the original square.
   D. Its sides are 2 units shorter than those of the original square.

2. Which of the following describes the image of a triangle after a dilation that has a scale factor of \( \frac{3}{4} \)?
   A. Each angle has \( \frac{3}{4} \) of the measure of its corresponding angle in the original triangle.
   B. Each angle has \( \frac{3}{4} \) of the measure of its corresponding angle in the original triangle.
   C. Each angle has the same measure as its corresponding angle in the original triangle.
   D. Each angle is \( \frac{3}{4} \) larger than the measure of its corresponding angle in the original triangle.

Short Answer

3. Triangle PQR has coordinates P (2, 4), Q (-2, 4), R (0, -6). Write the coordinates of the vertices of the image of a triangle after a dilation of 2.5.
   P' (_____,_____), Q' (_____,_____), R' (_____,_____)  

4. \( \overline{CD} \) was dilated around the origin by a scale factor of 2. The endpoints of the image are \( C'(8, 2) \) and \( D'(4, 8) \). What are the coordinates of the endpoints of the original line segment?
   C (_____,_____), D (_____,_____)  

5. What are the coordinates of \( \triangle PQR \) after a dilation with a scale factor of \( \frac{2}{3} \)?  
   P' (_____,_____), Q' (_____,_____), R' (_____,_____)  

6. \( \triangle D'E'F' \) is the image of \( \triangle DEF \) after a dilation with a scale factor of 2. What are the coordinates of the vertices of \( \triangle DEF \)?
   D (_____,_____), E (_____,_____), F (_____,_____)  

Determine whether the dilation from Figure A to Figure B is a reduction or enlargement. Then find its scale factor.

7.  

8.  

9.  

Determine if the polygons are similar. If so, what is the scale factor? Show your work to justify.

12. Find the values of x and y if \( \triangle HJI \sim \triangle MLI \)

\[ x = \underline{\quad} \quad y = \underline{\quad} \]

13. Find the values of x and y if \( \triangle DOT \sim \triangle BAT \)

\[ x = \underline{\quad} \quad y = \underline{\quad} \]

14. Find the missing lengths given \( \triangle MNP \sim \triangle SQV \)

\[ x = \underline{\quad} \quad NP = \underline{\quad} \quad QV = \underline{\quad} \]

15. Determine if the given triangles are similar. If so, complete the similarity statement and give the correct reason. If not, write not similar.

\( \triangle SUV \sim \triangle \underline{\quad} \)

by\( \underline{\quad} \)

16. Determine if the given triangles are similar. If so, complete the similarity statement and give the correct reason. If not, write not similar.

\( \triangle ABC \sim \triangle \underline{\quad} \)

by\( \underline{\quad} \)

\( \triangle ABC \sim \triangle \underline{\quad} \)

by\( \underline{\quad} \)