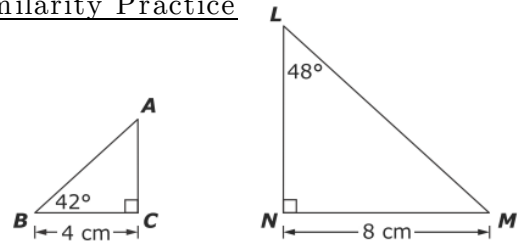


1. Are these two triangles similar? Explain how you know.

Similarity Practice

2. Given $\Delta RST \sim \Delta JKL$. $RS = 8$, $JK = 16$, and $KL = 14$.
What is the length of ST ?

Circle one: 6 7 22 24



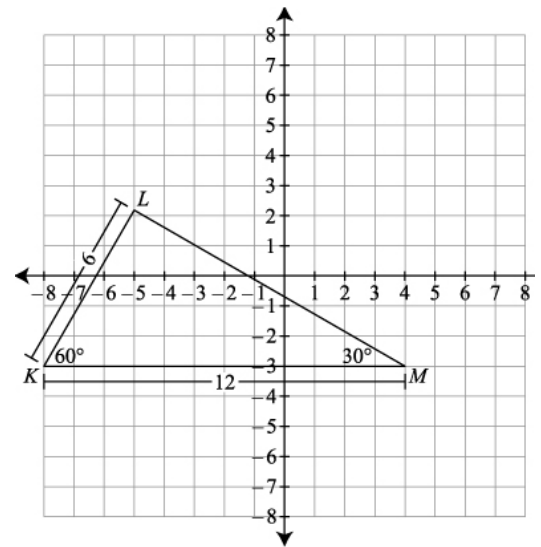
3. A rectangle is dilated on the coordinate plane. The area of the dilated rectangle is 9 times the area of the original rectangle. What was the scale factor of dilation?

4. There are two rectangles. HAPY has a length of 12 cm and a width of 4 cm. WNTR has a width that is one-third of the length. Which of the following will always be true of the relationship between these rectangles?

- a. Rectangle HAPY and rectangle WNTR are similar.
- b. The area of rectangle HAPY is three times the area of rectangle WNTR.
- c. The areas of rectangle HAPY and rectangle WNTR are the same.
- d. Rectangle HAPY and rectangle WNTR are congruent.

5. ΔKLM is dilated by a scale factor of $2/3$ centered at the origin and then translated according to the rule $(x, y) \rightarrow (x + 2, y)$. Which statement about $\Delta K'L'M'$ is true?

- a. $K'L' = 6$ units
- b. $K'M' = 14$ units
- c. $m\angle M' = 30^\circ$
- d. $m\angle K' = 40^\circ$

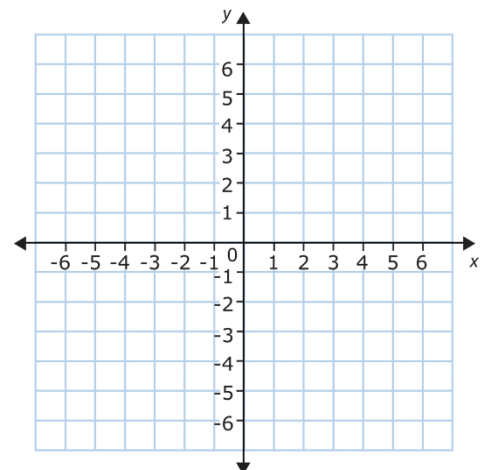


6. Which of the following proves that a dilation could show two triangles are similar?

- a. Two sides of one triangle are congruent to two sides of another triangle
- b. Two angles of one triangle are proportional to two angles of another triangle
- c. Two angles of one triangle are congruent to two angles of another triangle
- d. Two sides of one triangle are proportional to two angles of another triangle

7. The line $y = 2x - 4$ is dilated by a scale factor of $3/2$ about the origin. Which equation represents the image of the line after the dilation?

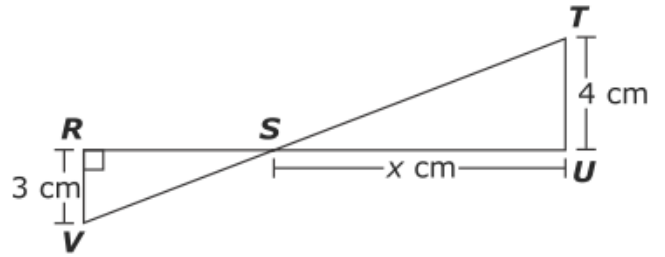
- a. $y = 2x - 4$
- b. $y = 3x - 4$
- c. $y = 2x - 6$
- d. $y = 3x - 6$



8. The equation that models line h is $2x+y=1$. Line m is the image of line h after a dilation of scale factor 4 centered at $(0,0)$. What is the equation of line m ?
- a. $y = -2x + 1$ b. $y = -2x + 4$ c. $y = 2x + 4$ d. $y = 2x + 1$

9. If $\Delta RSV \sim \Delta UST$, then mark all of the statements that are true.

- ΔSTU is a right triangle
 RS is $\frac{4}{3}x$ cm in length
 $\angle VRS \cong \angle STU$
 Area of ΔRSV is $\frac{9}{8}x$ cm²
 $m\angle RVS + m\angle UST = 90^\circ$



Using similarity:

10. One dark and stormy night, a lamppost stands silent on a street corner. Bill is standing 10 feet from its base, and his shadow is 9 feet long. Bill himself is 5'6". How tall is the lamppost?

11. Maria is a civil engineer and needs to find the height of a large tree so she can build a new cell tower that hides among the trees. She places a mirror face-up on the ground near the tree and steps back until she sees the top of the tree in the mirror. Now she knows the answer. Do you?

Questions:

12. Jessie, another engineer, wants to find out how wide a lake is in order to do an environmental study. She locates two points on opposite sides of the lake, a tree and a sculpture of a lobster. She then marks points on land near the lake and makes some measurements. She now knows the width of the lake. How?