



### Dilations and Similarity #4

1. What does proportional mean? \_\_\_\_\_

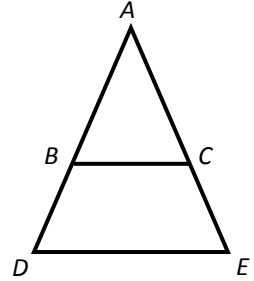
2. What does the symbol  $\sim$  mean? \_\_\_\_\_

3. What is the missing number?  $\frac{17}{x} = \frac{68}{52}$  Show your work.

4.  $ABC \sim ADE$ .

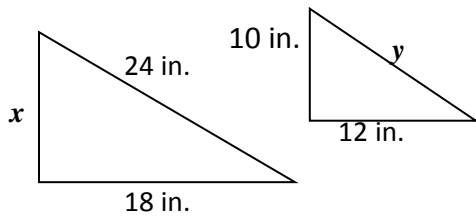
What line segment measurement would need to be put in the denominator to make the equation true?  $? =$  \_\_\_\_\_

$$\frac{m\overline{AB}}{m\overline{AD}} = \frac{m\overline{AC}}{?}$$



5. If  $\triangle ABC$  is dilated by a scale factor of 1.5 and  $m\overline{AB}$  is 6mm, how long is  $m\overline{AD}$ ?

6. The pair of triangles below are similar. What is the value of  $x$ ?

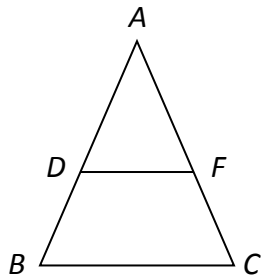


Proportion \_\_\_\_\_

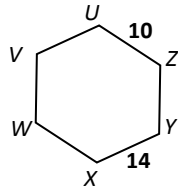
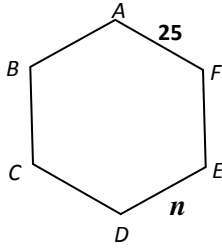
Solution \_\_\_\_\_

7. Using the figures above in problem #6, what is the value of  $y$ ?

8.  $\triangle ABC \sim \triangle ADF$ . If  $m\angle D$  is  $30^\circ$  and  $m\angle A$  is  $80^\circ$ , then what is  $m\angle B$ ?



9. The hexagons below are similar.

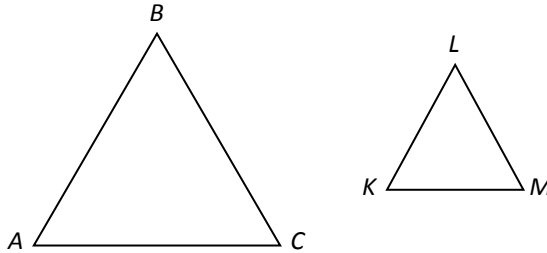


Find  $n$ :  $n = \underline{\hspace{2cm}}$

10. Triangle  $ABC$  is similar to triangle  $KLM$  where the ratio of proportionality is  $\frac{1}{6}$ , and  $AB = 24$  centimeters.

What is  $KL$ ?

- (A) 4 cm
- (B) 8 cm
- (C) 48 cm
- (D) 144 cm



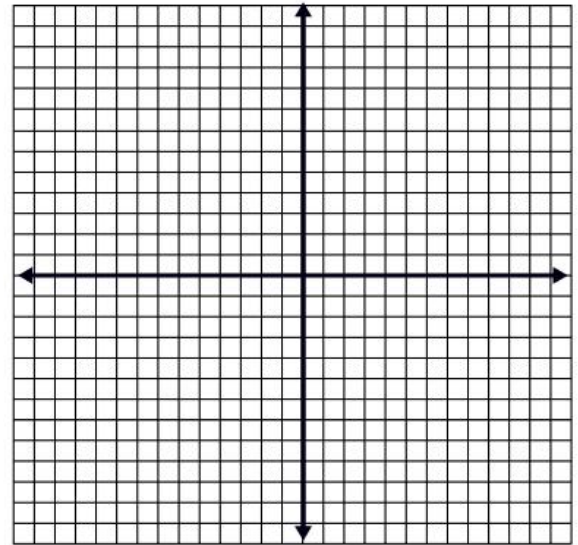
11. The vertices of  $\triangle ABC$  have coordinates of  $A(0, 0)$ ,  $B(0, 4)$ , and  $C(6, 0)$ . A second triangle, which is a transformation of the first, has the same vertex  $A$ . Its other vertices are  $B'(2, 0)$  and  $C'(0, -3)$ ,

Draw the triangles and then answer the question below.

- I. One triangle is a dilation of the other.
- II. One triangle is a rotation of the other.
- III. One triangle is congruent to the other.
- IV. One triangle is similar to the other.

Which of the following statements are true?

- A. I only
- B. II only
- C. IV only
- D. All except III.
- E. I and IV



12. The two triangles in the picture are similar. What is the value of  $x$ ?

- A.  $x = \frac{a}{3b}$
- B.  $x = \frac{b}{3b}$
- C.  $x = \frac{3b}{a}$
- D.  $x = 3b$

