

**EX 1: Converting Units.**

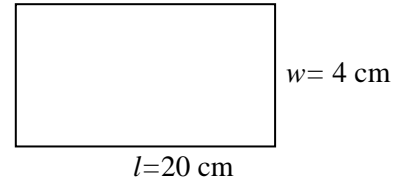
A)  $\frac{34 \text{ cm}}{4 \text{ cm}}$

B)  $\frac{10 \text{ ft}}{40 \text{ in}}$

B)  $\frac{3 \text{ yd}}{15 \text{ ft}}$

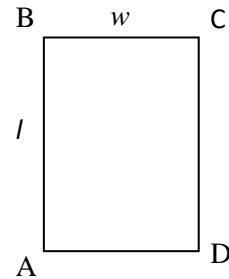
**EX 2: Writing Ratios.**

A) Find the width to length ratio of each rectangle. Then simplify the ratio.



**EX 3: Using Ratios.**

The perimeter of rectangle  $ABCD$  is 60 cm. The ratio of  $AB:BC$  is 3:2.  
Find the length and width of the rectangle.



**EX 4: Extended Ratios (Comparing more than two items)**

The measures of the angles in a triangle are in the extended ratio 3:4:8. Find the measures of the angles. (Draw a sketch)

If  $\frac{m}{a} = \frac{b}{r}$ , which of the following is not true?

a.  $\frac{a}{m} = \frac{r}{b}$

b.  $mb = ar$

c.  $mr = ab$

d.  $\frac{r}{a} = \frac{b}{m}$

**EX 5: Solving Proportions. (Cross Multiplying)**

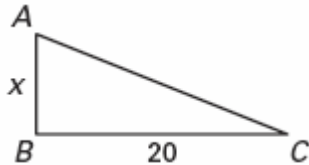
A) Solve:  $\frac{2}{7} = \frac{6}{x}$

B) Solve:  $\frac{x-6}{4} = \frac{x}{10}$

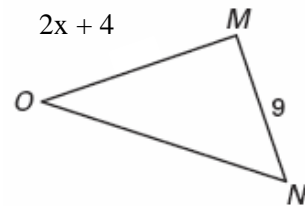
C) Solve:  $\frac{2}{3x-10} = \frac{8}{20}$

**EX 6: Using Proportions.**

A)  $AB : BC$  2:5. Solve for  $x$ .



B)  $MN : MO$  is 3:4



**EX 7: Find the geometric mean of the following numbers.**

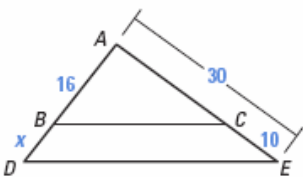
A) 36, 4

b) 16, 25

c) 12, 30

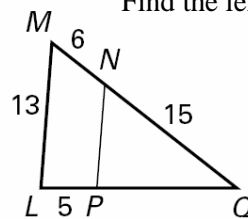
**EX 8: In the diagram**  $\frac{AB}{BD} = \frac{AC}{CE}$ .

Find the length of BD.



**EX 9: In the diagram**  $\frac{MQ}{MN} = \frac{LQ}{LP}$ .

Find the length of LQ.



**EX 10:** A scale model of the Titanic is 107.5 inches long and 11.25 inches wide. The Titanic itself was 882.75 feet long. How wide was it?

**EX 11:** You are building a scale model of your uncle's fishing boat. The boat is 62 ft long and 23 ft wide. The model will be 14 inches long. How wide should it be?

**EX 12: Triangle JKL and STU are similar.**

**Draw a sketch (JKL is larger)**

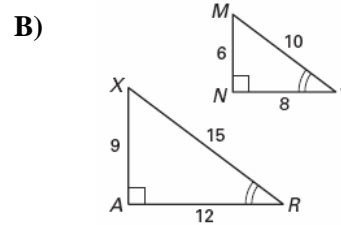
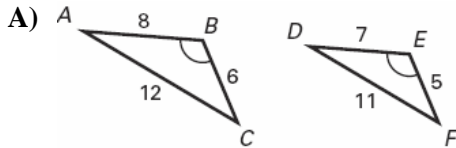
**List all the pairs of congruent angles.**

**Write the ratios of the corresponding sides in a statement of proportionality.**

**Write the statement of proportionality.**

**EX 13: Comparing Similar Polygons.**

Decide if the figures are similar. If the figures ARE similar, write a similarity statement.

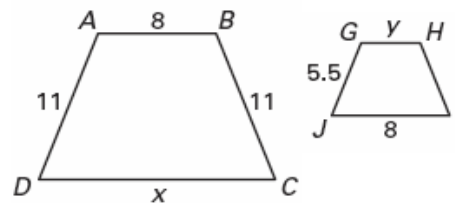


**EX 14: Using Similar Polygons  $ABCD \sim GHIJ$ .**

A) Find the scale factor of  $ABCD$  to  $GHIJ$ .

B) Find the scale factor of  $GHIJ$  to  $ABCD$ .

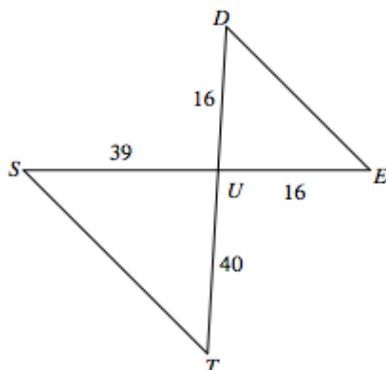
C) Find the values of  $x$  and  $y$ .



D) Find the ratio of the perimeter of  $ABCD$  to the perimeter of  $GHIJ$ .

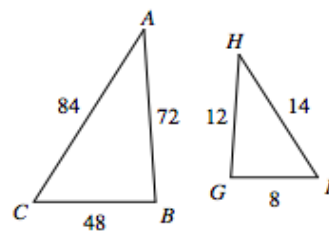
**EX 15: Determine if the triangles are similar. If so, state how you know they are similar and complete the similarity statement. If not, explain why.**

1)



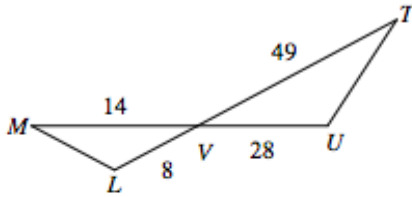
$\triangle UTS \sim \underline{\hspace{2cm}}$

2)



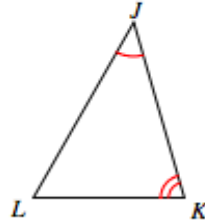
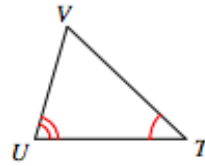
$\triangle CBA \sim \underline{\hspace{2cm}}$

3)



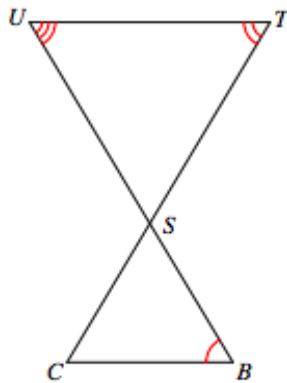
$\Delta VUT \sim$  \_\_\_\_\_

4)



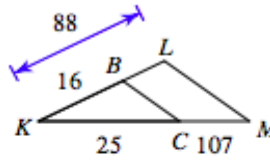
$\Delta JKL \sim$  \_\_\_\_\_

5)



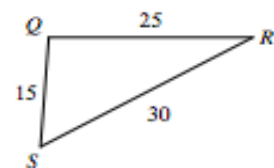
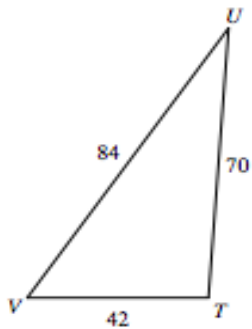
$\Delta STU \sim$  \_\_\_\_\_

6)



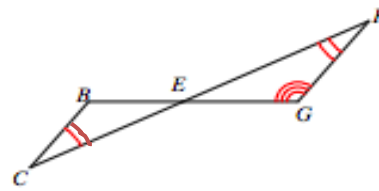
$\Delta KLM \sim$  \_\_\_\_\_

7)



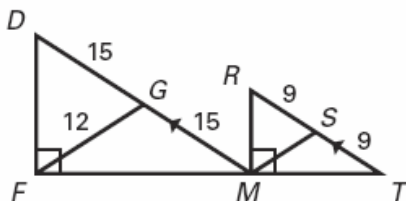
$\Delta TUV \sim$  \_\_\_\_\_

8)



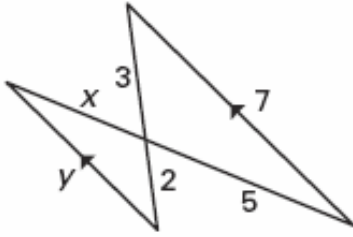
$\Delta EFG \sim$  \_\_\_\_\_

**EX 16: Find the length of the altitude MS.**

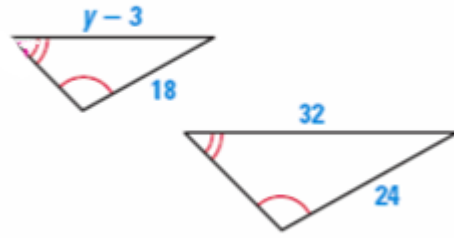


**EX 17: The triangles are similar. Find the value of the variable.**

A)



B)

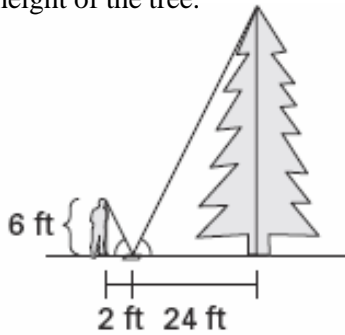


**EX 18: Using Similar Triangles.**

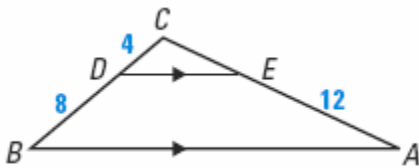
A) You are standing 15 m from building A and 50 m from building B. Building A is 90 m tall. Find the height of building B.



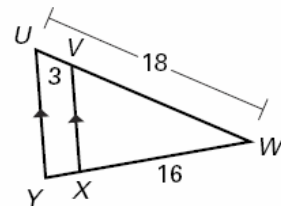
B) Find the height of the tree.



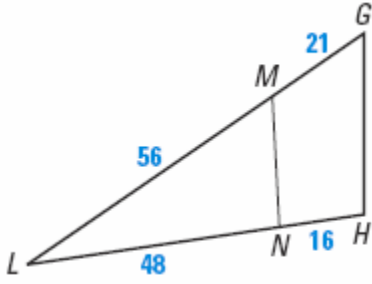
**EX 19: Find the length of EC.**



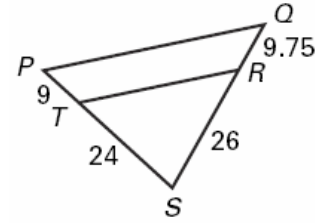
**EX 20: Find the length of YX.**



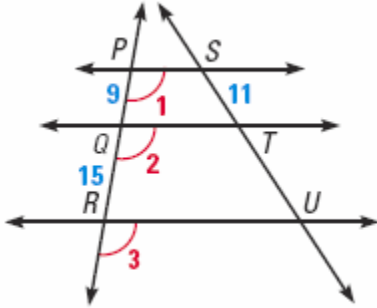
**EX 21:** Determine whether  $MN \parallel GH$ .



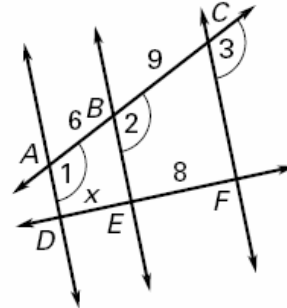
**EX 22:** Determine whether  $PQ \parallel TR$ .



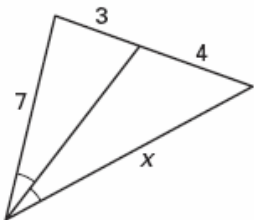
**EX 23:** What is the length of  $TU$ ?



**EX 24:** What is  $x$ ?



**EX 25:** Find the value of the  $x$ .



**EX 26:** Find the value of the  $x$ .

