Bellwork
3.15.12

Simplify each expression.

$\sqrt{12} \cdot \sqrt{2}$

$28 \div \sqrt{8}$

Bellwork
3.16.12

Simplify each expression.

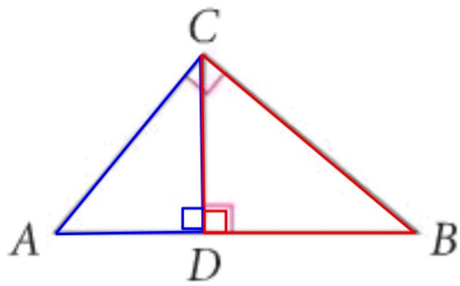
$$\frac{\sqrt{20}}{\sqrt{5}} \qquad \frac{\sqrt{6} \cdot \sqrt{3}}{\sqrt{9}} \qquad 45 \div \sqrt{3}$$

7.4 - Similarity in Right Triangles

Theorem 7-3

The altitude to the hypotenuse of a right triangle divides the triangle into two triangles that are similar to the original triangle and to each other.

ABC ~ ACD ~ CBD



Geometric Mean: proportions where the means are equal.

Finding Geometric Mean of two numbers: multiply the numbers together and take the square root.

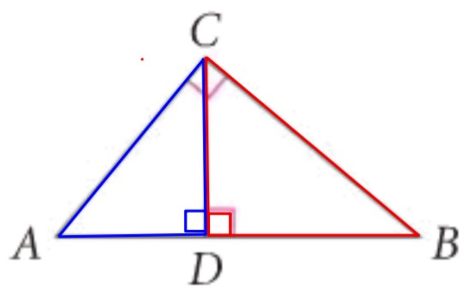
Find the geometric mean of 4 and 18.

Find the geometric mean of 15 and 20.

Corollary **Corollary 1 to Theorem 7-3**

The length of the altitude to the hypotenuse of a right triangle is the geometric mean of the lengths of the segments of the hypotenuse.

$$\frac{AD}{CD} = \frac{CD}{DB}$$

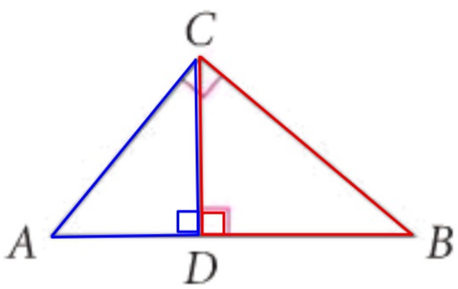


Corollary

Corollary 2 to Theorem 7-3

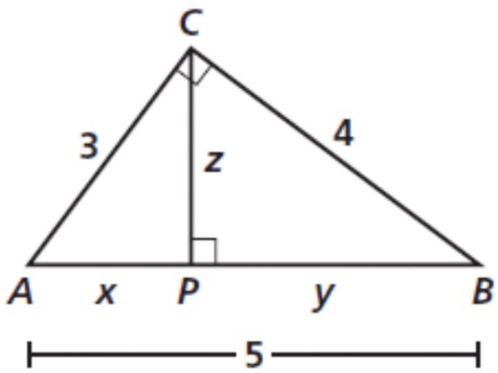
The altitude to the hypotenuse of a right triangle separates the hypotenuse so that the length of each leg of the triangle is the geometric mean of the length of the adjacent hypotenuse segment and the length of the hypotenuse.

$$\frac{AD}{AC} = \frac{AC}{AB}, \frac{DB}{CB} = \frac{CB}{AB}$$

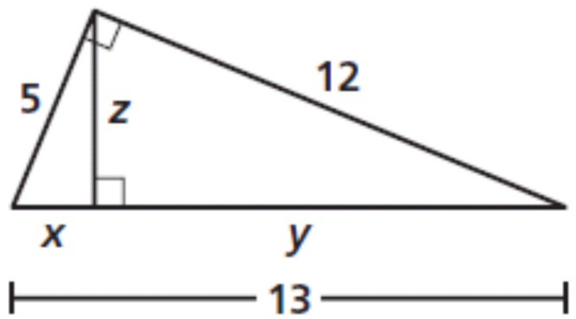


Corollary 2 gives you $AB \cdot AP = (AC)^2$ $AB \cdot BP = (BC)^2$

Corollary 1 gives you $(CP)^2 = AP \cdot BP$



1.



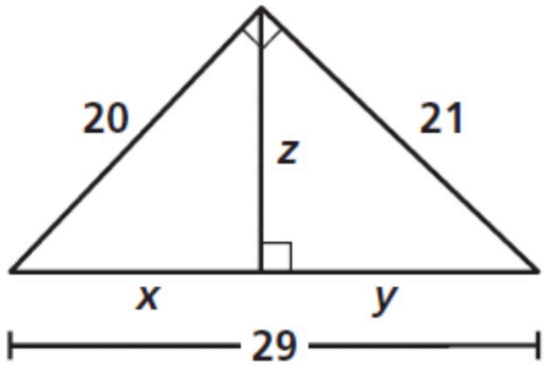
Bellwork
3.19.12

- **Please do not ask about your grades during class.**
- **I am still entering grades. I will post new grades tomorrow.**
- **If you have a question about your grade come see me before or after school.**

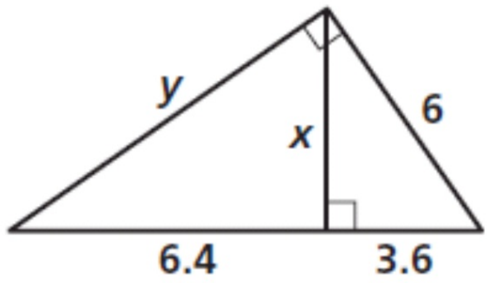
Find the geometric mean of each pair of numbers.

1. 4 and 9 **2.** 4 and 10 **3.** 4 and 12

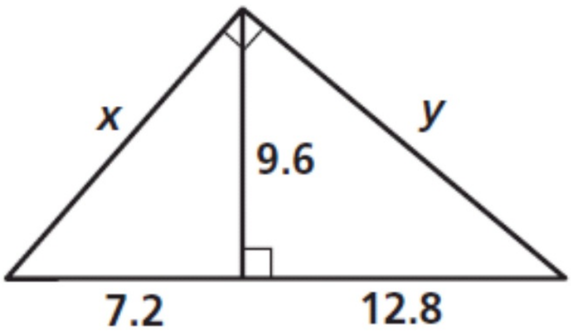
2.



3.



4.



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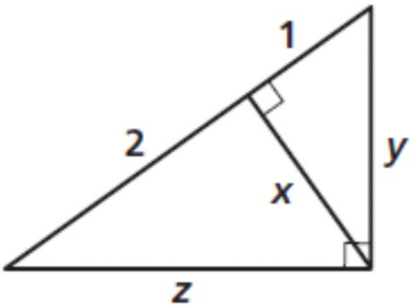

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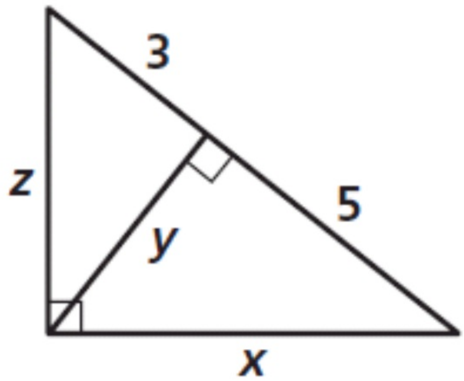
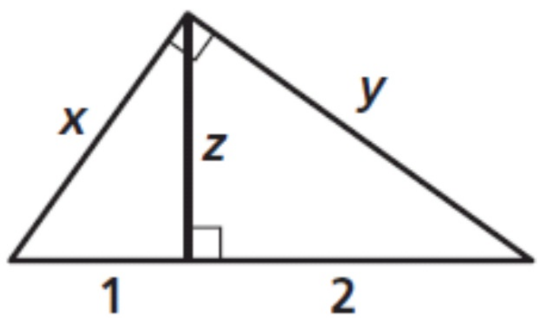


Bellwork **Happy Spring!**
3.20.12

Find the values of the variables.



7.5 - Proportions in Triangles

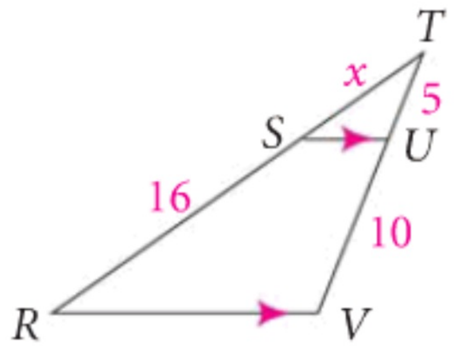
Theorem 7-4 **Side-Splitter Theorem**

If a line is parallel to one side of a triangle and intersects the other two sides, then it divides those sides proportionally.

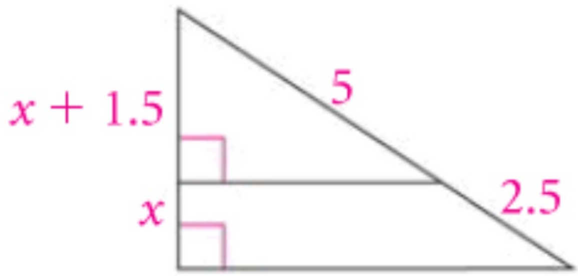
1 EXAMPLE Using the Side-Splitter Theorem

Find the value of x.

$$\frac{TS}{SR} = \frac{TU}{UV}$$

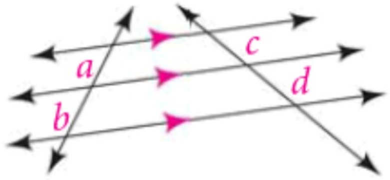


Use the Side-Splitter Theorem to find the value of x.



Corollary **Corollary to Theorem 7-4**

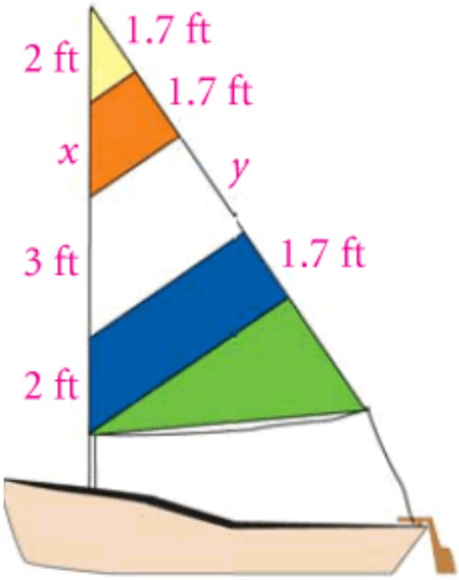
If three parallel lines intersect two transversals, then the segments intercepted on the transversals are proportional.



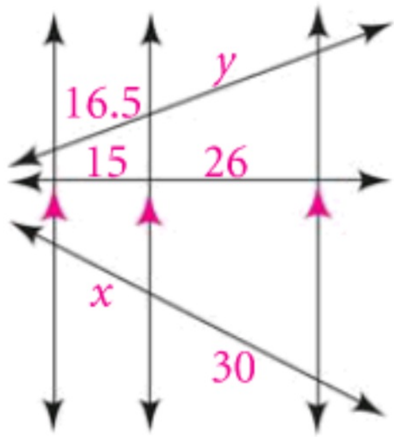
$$\frac{a}{b} = \frac{c}{d}$$

2 EXAMPLE

The edges of the panels in the sail at the right are parallel. Find the lengths x and y.



Solve for x and y.



Bellwork
3.21.12

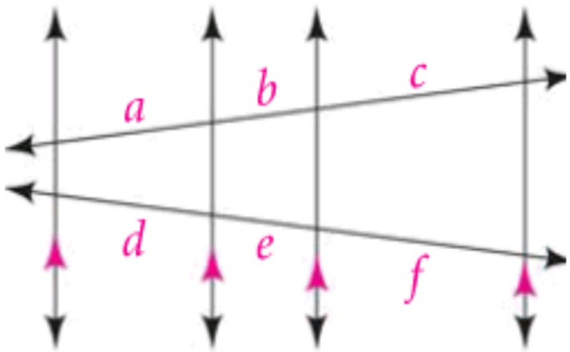
Use the figure at the right to complete each proportion.

4. $\frac{a}{b} = \frac{\blacksquare}{e}$

5. $\frac{b}{\blacksquare} = \frac{e}{f}$

6. $\frac{f}{e} = \frac{c}{\blacksquare}$

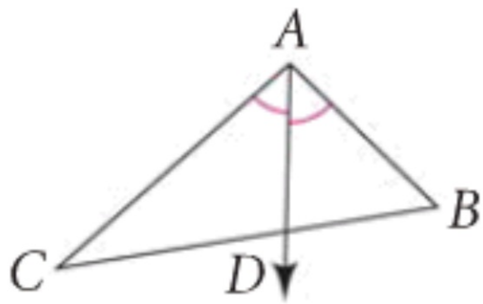
7. $\frac{a}{b + c} = \frac{\blacksquare}{e + f}$



Theorem 7-5 **Triangle-Angle-Bisector Theorem**

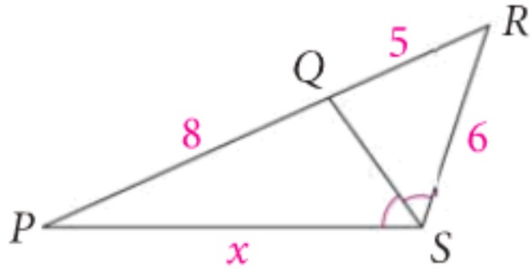
If a ray bisects an angle of a triangle, then it divides the opposite side into two segments that are proportional to the other two sides of the triangle.

$$\frac{AB}{AC} = \frac{BD}{DC} \quad \text{or} \quad \frac{AB}{BD} = \frac{AC}{CD}$$

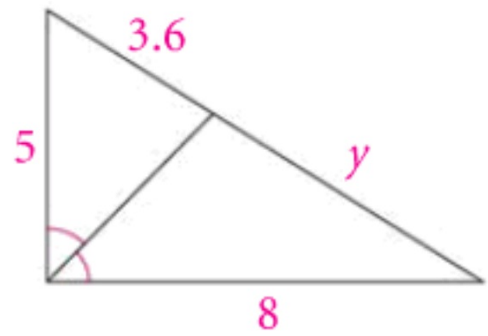


3 EXAMPLE Using the Triangle-Angle-Bisector Theorem

Find the value of x.

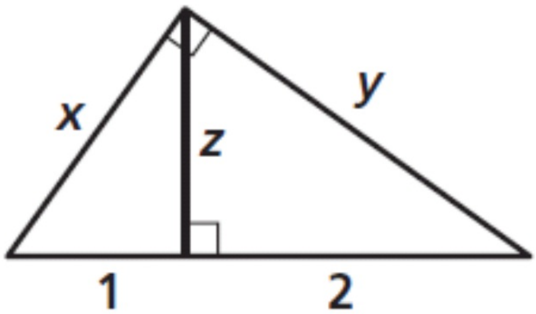


Find the value of y.



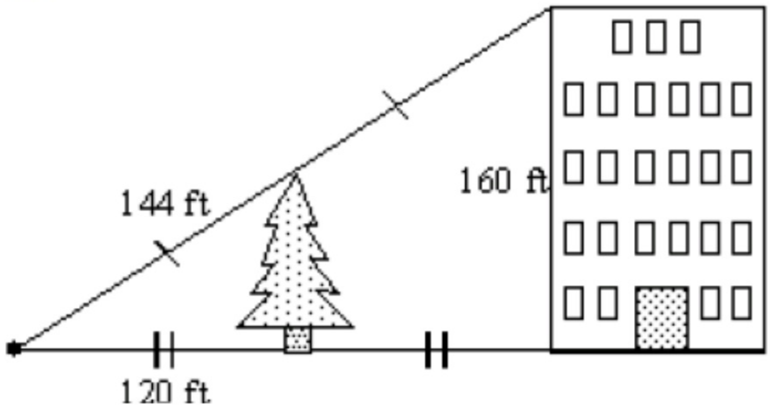
Formative Assessment

Find the values of the variables.



Bellwork
3.23.12

Find the height of the tree.

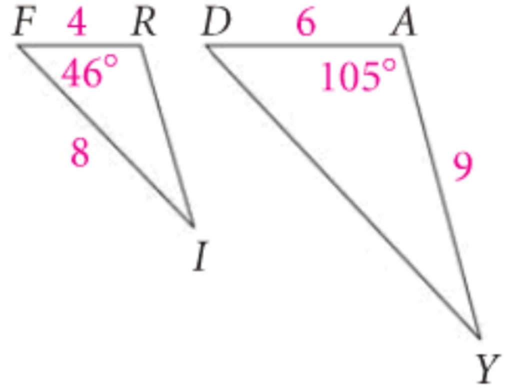


Dollhouses **Dollhouse furnishings come in different sizes depending on the size of the dollhouse. For each exercise, write a ratio of the size of the dollhouse item to the size of the larger item.**

8. dollhouse sofa: $1\frac{1}{2}$ in. long;
real sofa: 6 ft long

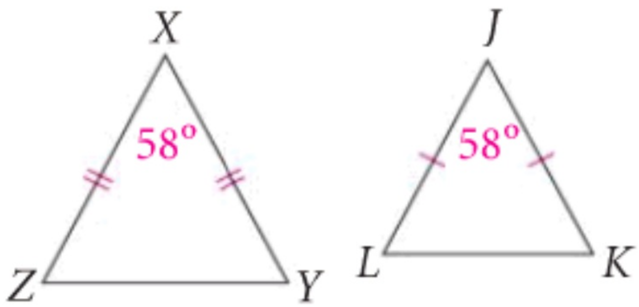
The triangles are similar. Find the similarity ratio of the first to the second.

16.



Are the triangles similar? If so, write the similarity statement and name the postulate or theorem you used. If not, explain.

20.

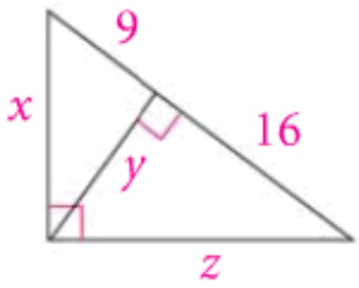


Find the geometric mean of each pair of numbers.

24. 4 and 25

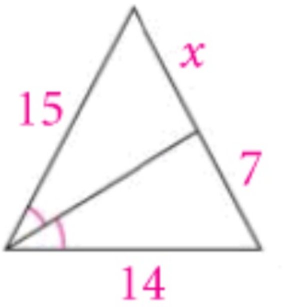
Find the values of the variables.

30.



Find the value of x.

33.



3.26.12 **Chapter 7 Test**

- Name/Date/Test # and Letter
- Turn in your review.
- Start on # 51 on the back of your scantron.

$$AB \cdot AP = (AC)^2$$

$$AB \cdot BP = (BC)^2$$

$$(CP)^2 = AP \cdot BP$$

Test A: # 8 Cross out choice "C."