Pop Quiz
Get out a scrap sheet of paper.

1. Geometric Mean (Altitude) Theorem:

    _____ = _____
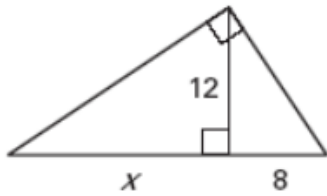
2. Geometric Mean (Leg) Theorem:
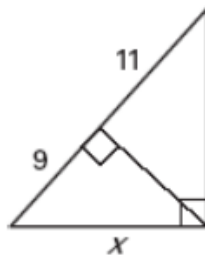
    _____ = _____

LESSON 7.3

Practice B

For use with pages 448–456
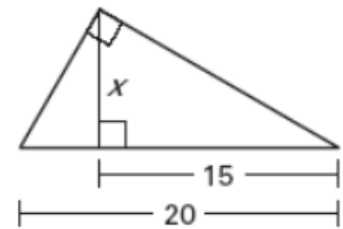
Complete and solve the proportion.

1. $\dfrac{x}{12} = \dfrac{\_}{8}$
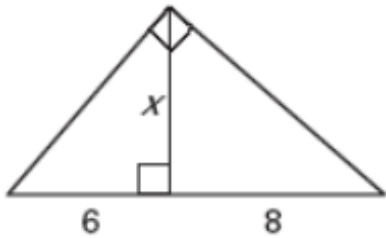

2. $\dfrac{9}{x} = \dfrac{x}{\_}$

3. $\dfrac{15}{x} = \dfrac{x}{\_}$

Find the value(s) of the variable(s).

4.

5.

$$\frac{66\frac{2}{3}}{C} = \frac{C}{42\frac{2}{3}}$$

$$C^2 = \frac{25600}{9}$$
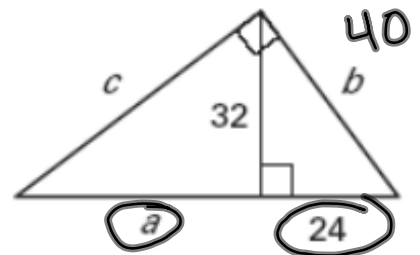
$$C = 53\frac{1}{3}$$

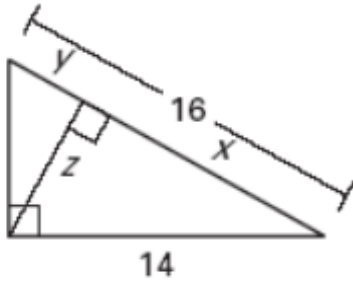$$\frac{66\frac{2}{3}}{b} = \frac{b}{24}$$

$$b^2 = 1600$$

$$b = 40$$

$$\frac{a}{32} = \frac{32}{24}$$

$$24a = 1024$$

$$a = 42\frac{2}{3}$$

6.

y

16

z

x

14

7.

$w + 9$

8   18
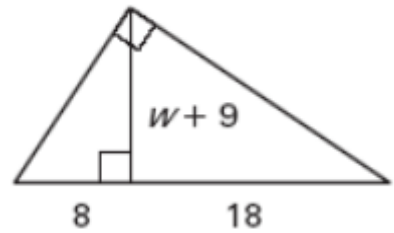
$$\frac{8}{(w+9)} = \frac{(w+9)}{18}$$

$$(w+9)(w+9) = 144$$

$$w^2 + 18w + 81 = 144$$
$$-144 \quad -144$$

$$w^2 + 18w - 63 = 0$$

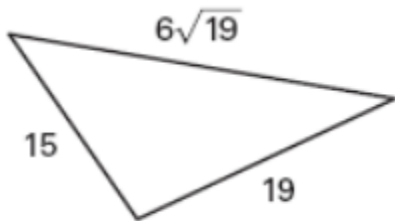$$(w+21)(w-3) = 0$$

$$21w + -3w = 18w$$

$$w + 21 = 0$$
$$w = -21$$
$$w - 3 = 0$$
$$\boxed{w = 3}$$

Tell whether the triangle is a right triangle. If so, find the length of the altitude to the hypotenuse. Round decimal answers to the nearest tenth.

8.

$6\sqrt{19}$

15

19

9.

18

30

y

x

$6\sqrt{34}$

$$(6\sqrt{34})^2 = 30^2 + 18^2$$

$$1224 = 900 + 324$$

$$1224 = 1224 \checkmark$$

1) $\dfrac{6\sqrt{34}}{18} = \dfrac{18}{x}$

$6\sqrt{34}\, x = 324$

$x = \boxed{9.3}$

2) $6\sqrt{34} - 9.3 = \boxed{25.7}$

3) $\dfrac{25.7}{y} = \dfrac{y}{9.3}$

$y^2 = 239.01$

$y = 15.5$

Use the Geometric Mean Theorems to find *AC* and *BD*.

10.

A

2

C

$\sqrt{10}$

3

$\sqrt{6}$

B   X   D

11.

B

$\sqrt{35}$

C   5   D   A
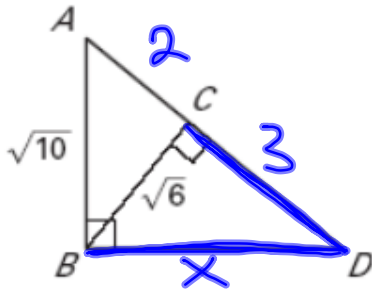
$(\sqrt{10})^2 = (\sqrt{6})^2 + b^2$

$10 = 6 + b^2$

$b^2 = 4$

$b = 2$
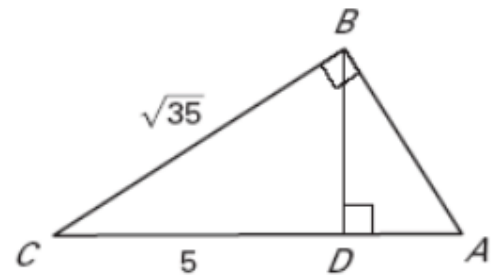
$\dfrac{5}{BD} = \dfrac{BD}{3}$

$BD^2 = 15$

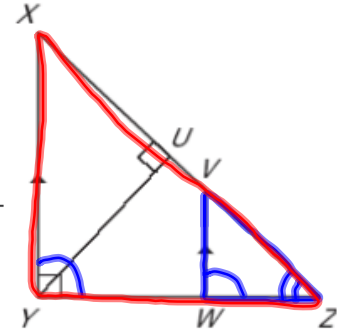$BD = \sqrt{15}$

3.87

$\dfrac{CD}{\sqrt{6}} = \dfrac{\sqrt{6}}{2}$

$2CD = 6$

$CD = 3$

12. GIVEN: $\triangle XYZ$ is a right triangle with $m\angle XYZ = 90°$.
$\overline{VW} \parallel \overline{XY}$, YU is an altitude of $\triangle XYZ$.

PROVE: $\triangle YUZ \sim \triangle VWZ$

Statements	Reasons
1. $\triangle XYZ$ is a right $\triangle$ with altitude $\overline{YU}$.	1. Given
2. $\triangle XYZ \sim \triangle YUZ$	2. Thm 7.5
3. $\overline{VW} \parallel \overline{XY}$	3. Given
4. $\angle VWZ \cong \angle XYZ$	4. Corresponding ∡'s Post.
5. $\angle Z \cong \angle Z$	5. Reflexive Prop
6. $\triangle VWZ \sim \triangle XYZ$	6. AA Similarity Postulate
7. $\triangle YUZ \sim \triangle VWZ$	7. Substitution Prop. of =

Homework Assignment

Pg. 494-495 #4-18