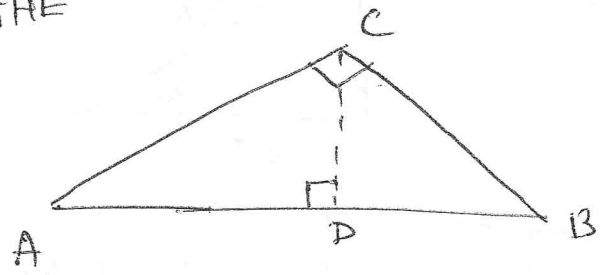


Mr.Reddy's Notes 7.3 Similar Right Triangles Geometry

I Geometric Mean (ALTITUDE) THEOREM:

IN A RIGHT TRIANGLE, THE ALTITUDE FROM THE RIGHT ANGLE TO THE HYPOTENUSE DIVIDES THE HYPOTENUSE INTO TWO SEGMENTS:

THE LENGTH OF THE ALTITUDE IS THE GEOMETRIC MEAN OF THE LENGTHS OF THE TWO SEGMENTS:-



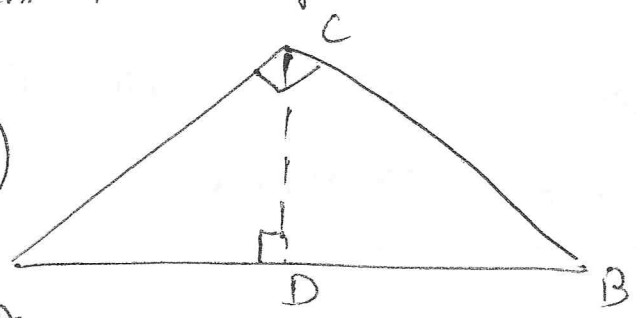
$$\frac{BD}{CD} = \frac{CD}{AD}$$

CD IS THE (Geometric Mean)

II. Geometric Mean (leg) THEOREM:-

IN A RIGHT TRIANGLE, THE ALTITUDE FROM THE RIGHT ANGLE TO THE HYPOTENUSE DIVIDES THE HYPOTENUSE INTO TWO SEGMENTS:

THE LENGTH OF each leg of the right triangle IS THE GEOMETRIC MEAN OF THE LENGTHS OF THE HYPOTENUSE AND THE SEGMENT OF THE HYPOTENUSE THAT IS ADJACENT TO THE LEG.

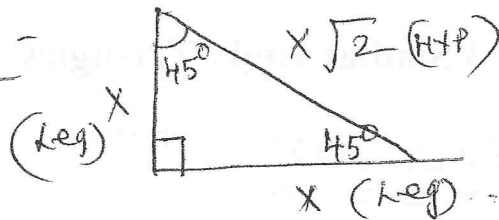


$$\frac{AB}{CB} = \frac{CB}{DB} \quad \text{and} \quad \left(\begin{array}{l} CB \text{ IS} \\ \text{G.M} \end{array} \right)$$

$$\frac{AB}{AC} = \frac{AC}{AD} \quad \left(\begin{array}{l} AC \text{ IS} \\ \text{G.M} \end{array} \right)$$

7.41 SPECIAL RIGHT TRIANGLES:-

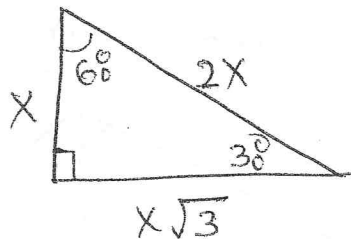
① $\underline{45^\circ - 45^\circ - 90^\circ}$:-



x	x	$x\sqrt{2}$	45°	45°	90°
-----	-----	-------------	------------	------------	------------

HYPOTENUSE = $\sqrt{2} \cdot \text{LEG}$

2) $\underline{30^\circ - 60^\circ - 90^\circ}$:-



x	$x\sqrt{3}$	$2x$	30°	60°	90°
-----	-------------	------	------------	------------	------------

Hypotenuse = $2 \cdot \text{Shorter leg}$

Longer leg = $\sqrt{3} \cdot \text{Shorter leg}$

SONG:- $x = x - x\sqrt{2}$ 45° 45° 90°

$x - x\sqrt{3} - 2x$ 30° 60 90°

SAME ORDER - - - NO DISORDER - - -

RIGHT TRIANGLE - - - -

Name _____

Date _____

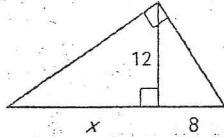
LESSON 73

Practice

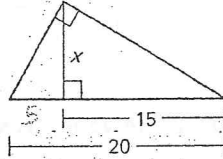
For use with pages 448-456

Complete and solve the proportion.

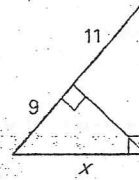
1. $\frac{x}{12} = \frac{?}{8}$



2. $\frac{15}{x} = \frac{x}{?}$

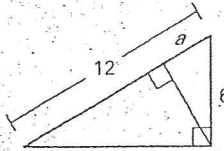


3. $\frac{9}{x} = \frac{x}{?}$

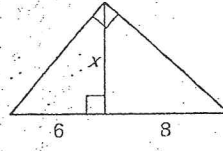


Find the value(s) of the variable(s).

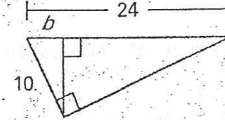
4.



5.

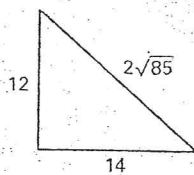


6.

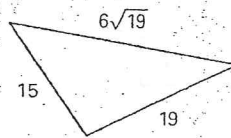


Tell whether the triangle is a right triangle. If so, find the length of the altitude to the hypotenuse. Round decimal answers to the nearest tenth.

10.

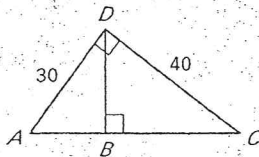


11.

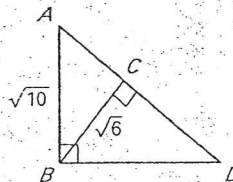


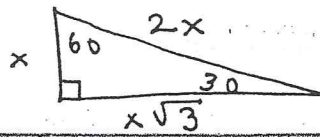
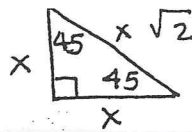
Use the Geometric Mean Theorems to find AC and BD. (PYTHAG - SIMILAR Δ's)

13.



14.

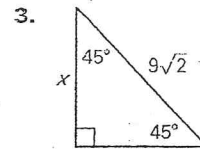
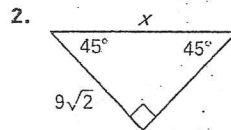
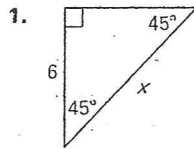




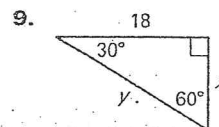
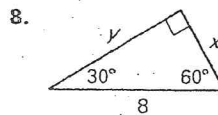
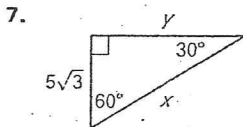
Name _____ Date _____

LESSON 7.4 Practice
For use with pages 457-464

Find the value of x . Write your answer in simplest radical form.

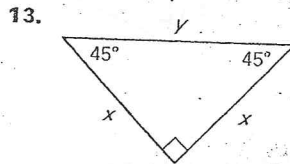


Find the value of each variable. Write your answers in simplest radical form.



ision of Houghton Mifflin Company.

Complete the table.



x	5	4	$\sqrt{2}$	9	$12\sqrt{2}$
y	$5\sqrt{2}$	$4\sqrt{2}$	2	$9\sqrt{2}$	24

Find the value of each variable. Write your answers in simplest radical form.

