Name _____ Date _____

9.2 Puzzle Time

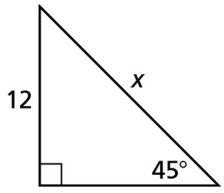
What Is Always In Its House, No Matter Where It Goes?

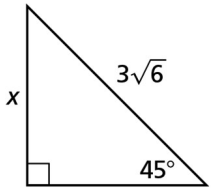
Circle the letter of each correct answer in the boxes below. The circled letters will spell out the answer to the riddle.

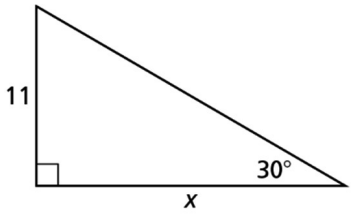
Complete the sentence.

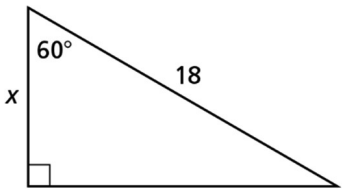
1. In a 45°-45°-90° triangle, the hypotenuse is _____ times as long as each leg.
2. A 45°-45°-90° triangle is a(n) _____ right triangle that can be formed by cutting a square in half.
3. In a 30°-60°-90° triangle, the hypotenuse is twice as long as the shorter leg, and the longer leg is _____ times as long as the shorter leg.

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

4. 

5. 

6. 

7. 

A	**L**	**A**	**T**	**E**	**U**	**R**
$12\sqrt{2}$	$18\sqrt{3}$	3	$\sqrt{2}$	acute	9	$3\sqrt{3}$
T	**L**	**O**	**V**	**E**	**N**	**Y**
$11\sqrt{3}$	$\sqrt{3}$	4	$12\sqrt{3}$	isosceles	2	$11\sqrt{2}$

Name _____ Date _____

9.3 Puzzle Time

Why Did The Forest Ranger Change Jobs?

A	B	C	D	E	F
G	H	I			

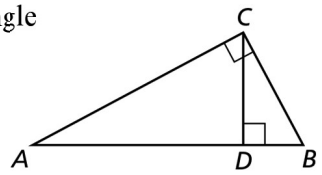
Complete each exercise. Find the answer in the answer column. Write the word under the answer in the box containing the exercise letter.

Complete the sentence.

A. If the _____ is drawn to the hypotenuse of a right triangle, then the two triangles formed are similar to the original triangle and to each other.

B. 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 _____ mean of the lengths of the two segments.

C. Identify the smallest similar triangle using the diagram for $\triangle ABC$.

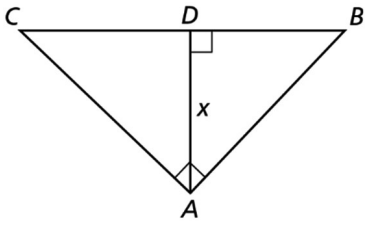


Find the value of *x*. Round your answer to the nearest tenth.

D. $AC = 63, AB = 16, CB = 65$

E. $AC = 12, AB = 5, CB = 13$

F. $AC = 15, AB = 8, CB = 17$



Find the geometric mean of the two numbers. Round your answer to the nearest tenth.

G. 15 and 24

H. 18 and 30

I. 20 and 35

26.5 LEAF	length THE
bisector WAS	23.2 NEW
geometric HE	$\triangle BCD$ GRASS
9.1 TIME	altitude BECAUSE
15.5 TO	16.5 GREENER
$\triangle CBD$ WANTED	23.1 WITH
18.8 FOREST	4.6 TURN
7.1 OVER	5.4 TREE
27.6 END	19.0 A