

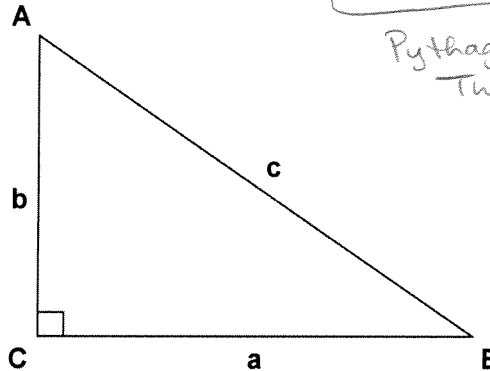
Geometry
WS - Practice 7.1 & 7.2

Name Key

Use $\triangle ABC$ to determine if the equation is true or false.

$$a^2 + b^2 = c^2$$

Pythagorean Theorem



1. $b^2 + a^2 = c^2$ TRUE
2. $c^2 - a^2 = b^2$ TRUE
3. $b^2 - c^2 = a^2$ FALSE $\Rightarrow b^2 - c^2 = -a^2$
4. $c^2 = a^2 - b^2$ FALSE $\Rightarrow c^2 = a^2 + b^2$
5. $c^2 = b^2 + a^2$ TRUE
6. $a^2 = c^2 - b^2$ TRUE

Find the unknown side length. Simplify answers that are radicals.

7.

$$(\sqrt{7})^2 + (x)^2 = (\sqrt{19})^2$$

$$7 + x^2 = 19$$

$$x^2 = 12$$

$$x = \pm\sqrt{12}$$

$$x = 2\sqrt{3}$$

8.

$$x^2 + 12^2 = 13^2$$

$$x^2 + 144 = 169$$

$$x^2 = 25$$

$$x = \pm\sqrt{25}$$

$$x = 5$$

9.

$$6^2 + 5^2 = x^2$$

$$36 + 25 = x^2$$

$$61 = x^2$$

$$\pm\sqrt{61} = x$$

$$\sqrt{61} = x$$

Find the area of the figure. Round decimal answers to the nearest tenth.

10.

$$A = \frac{1}{2} b \cdot h$$

$$A = \frac{1}{2} (7)(10)$$

$$A = 35 \text{ ft}^2$$

11.

$$4^2 + x^2 = 12^2$$

$$16 + x^2 = 144$$

$$x^2 = 128$$

$$x = \pm\sqrt{128}$$

So, base = 8
height = $8\sqrt{2}$

12.

$$A = \frac{1}{2} (8)(8\sqrt{2})$$

$$A = 32\sqrt{2} \text{ cm}^2$$

$$A = \frac{1}{2} h(b_1 + b_2)$$

$$A = \frac{1}{2} (14)(11 + 20)$$

$$A = (7)(31)$$

$$A = 217 \text{ in}^2$$

Decide whether the numbers can represent the side lengths of a triangle. If they can, classify the triangle as **right**, **acute**, or **obtuse**.

13. 5, 12, 13

$$13^2 \square 5^2 + 12^2$$

$$169 \square 25 + 144$$

$$169 = 169$$

$$\text{Right } \triangle$$

14. $\sqrt{8}, 4, 6$

$$6^2 \square (\sqrt{8})^2 + 4^2$$

$$36 \square 8 + 16$$

$$36 > 24$$

$$\text{OBTUSE } \triangle$$

15. 20, 21, 28

$$28^2 \square 20^2 + 21^2$$

$$784 \square 400 + 441$$

$$784 < 841$$

$$\text{Acute } \triangle$$

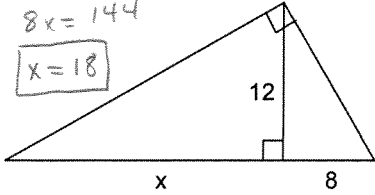
Geometry
WS - Practice 7.3

Complete and solve the proportion.

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

$8x = 144$

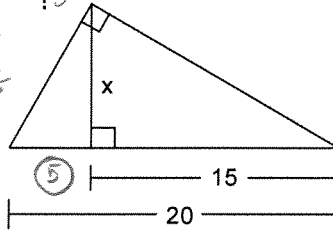
$x = 18$



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

$x^2 = 75$
 $x = \pm\sqrt{75}$

$x = 5\sqrt{3}$



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

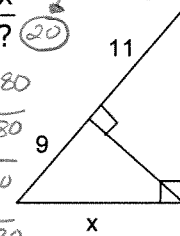
$x^2 = 180$

$x = \pm\sqrt{180}$

$x = \sqrt{9 \cdot 20}$

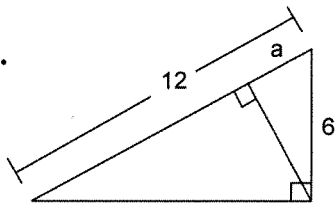
$x = 3\sqrt{20}$

$x = 3(2\sqrt{5})$
 $x = 6\sqrt{5}$



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

4.

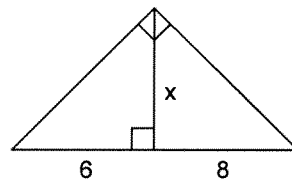


$\frac{12}{6} = \frac{6}{a}$

$12a = 36$

$a = 3$

5.



$\frac{6}{x} = \frac{x}{8}$

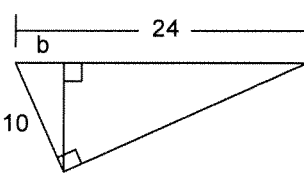
$x^2 = 48$

$x = \pm\sqrt{48}$

$x = \pm\sqrt{16 \cdot 3}$

$x = 4\sqrt{3}$

6.



$\frac{24}{10} = \frac{10}{b}$

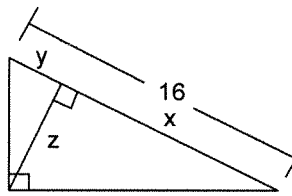
$100 = 24b$

$\frac{100}{24} = b$

$\frac{25}{6} = b$

$4.2 \approx b$

7.



FIRST

$\frac{16}{14} = \frac{14}{x}$

$16x = 196$

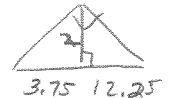
$x = 12.25$

SECOND

$x + y = 16$

$12.25 + y = 16$

$y = 3.75$



THIRD

$\frac{3.75}{z} = \frac{z}{12.25}$

$z^2 = 45.9375$

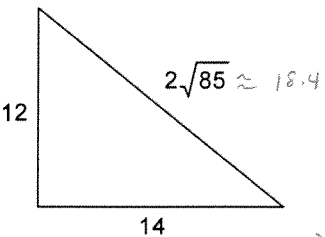
$z = \pm\sqrt{45.9375}$

$z \approx 6.78$

FIGURE OUT WHICH SIDE IS THE LARGEST \Rightarrow This is "C"

Tell whether the triangle is a right triangle.

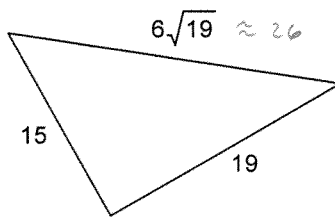
8.



$12^2 + 14^2 = (2\sqrt{85})^2$
 $144 + 196 = 340$
 $340 = 340$ TRUE

YES

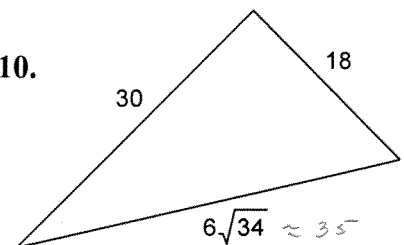
9.



$15^2 + 19^2 = (6\sqrt{19})^2$
 $225 + 361 = 684$
 $586 = 684$ FALSE

NO

10.

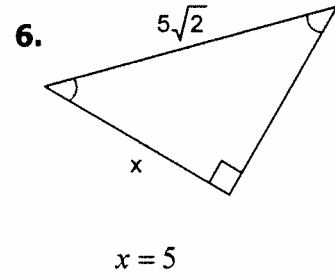
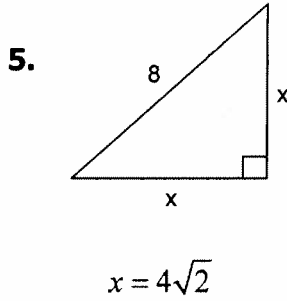
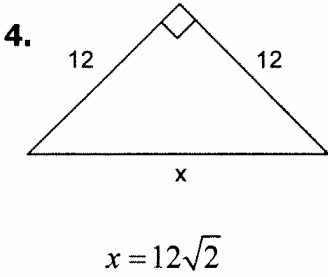
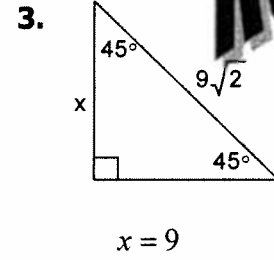
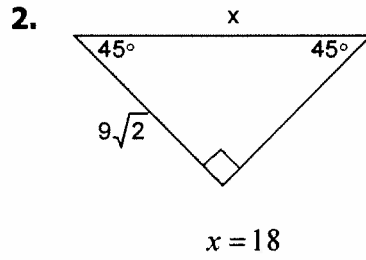
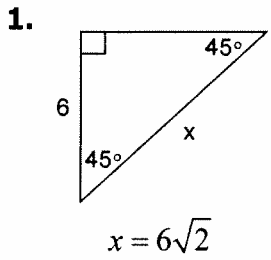


$18^2 + 30^2 = (6\sqrt{34})^2$
 $324 + 900 = 1224$
 $1224 = 1224$ TRUE

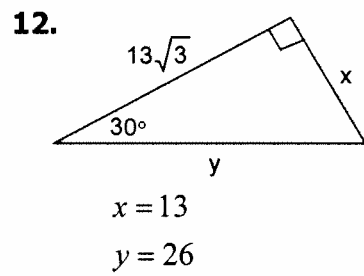
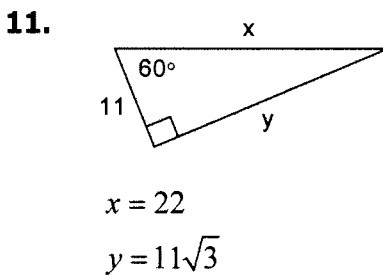
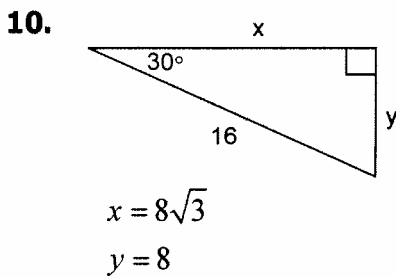
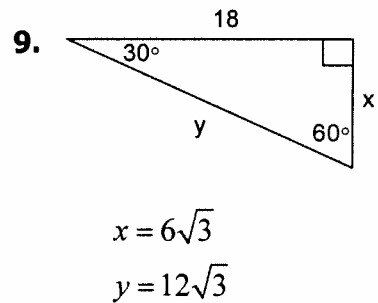
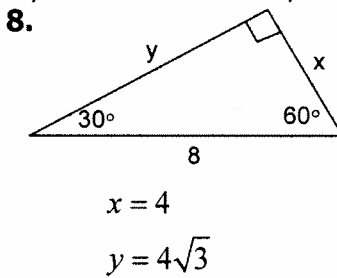
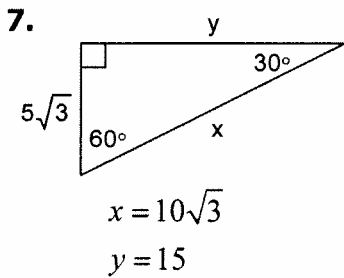
YES

KEY

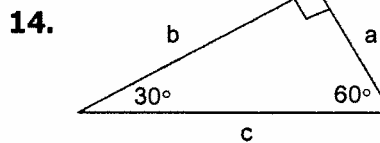
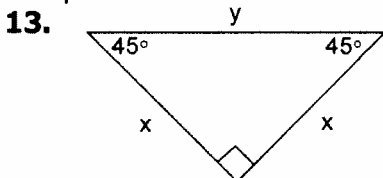
Find the value of x . Write your answer in simplest radical form.



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



Complete the table.



X	5	4	$\sqrt{2}$	9	$12\sqrt{2}$
Y	$5\sqrt{2}$	$4\sqrt{2}$	2	$9\sqrt{2}$	24

a	9	$3\sqrt{3}$	5	11	8
b	$9\sqrt{3}$	9	$5\sqrt{3}$	$11\sqrt{3}$	$8\sqrt{3}$
c	18	$6\sqrt{3}$	10	22	16