Solve for the indicated side of the right triangles: See you tube:

1.

$3^2 + X^2 = 5^2$

$9 + X^2 = 25$

$-9 \qquad -9$

$\sqrt{X^2} = \sqrt{16}$

$X = 4$

https://www.youtube.com/
  watch?v=tgThkny-KJm
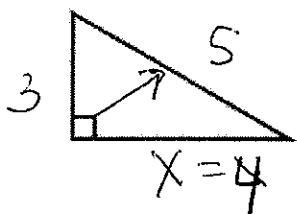
or

How do you find a leg?

2.
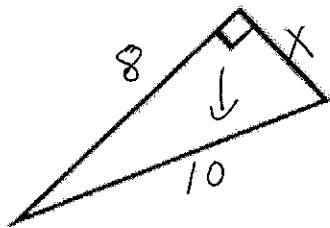
$8^2 + X^2 = 10^2$

$64 + X^2 \neq 100$

$-64 \qquad -64$

$\sqrt{X^2} = \sqrt{36}$

$X = 6$

Remember

$\sqrt{X^2} = \sqrt{XX}$

$= X$

3.
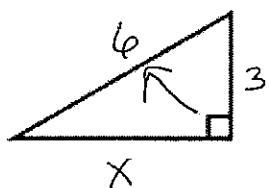
$3^2 + X^2 = 6^2$

$9 + X^2 = 36$

$-9 \qquad -9$

$\sqrt{X^2} = \sqrt{27}$

$X = \sqrt{3 \cdot 9}$

$X = \sqrt{3 \cdot 3 \cdot 3}$

$X = 3\sqrt{3}$

4.
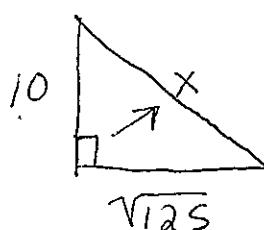
$\sqrt{125 \cdot 125}$

125

$10^2 + \sqrt{125}^2 = X^2$

$100 + 125 = X^2$

$\sqrt{225} = \sqrt{X^2}$

$15 = X$

Geometry   Name_____

Pythagorean Theorem Legs

Date_____ Period____

**Find the missing side of each triangle. Round your answers to the nearest tenth if necessary.**

1)

x 8 mi

10 mi

2)

13 ft x

12 ft

3)

15 mi

12 mi x

4)

4 in

x 5 in

5)

6   $\sqrt{52}$

x

6)

$\sqrt{20}$

4   x

7)

8

x

$\sqrt{208}$

8)

$\sqrt{325}$

x

15

9)

27

$\sqrt{2025}$

x

10)

$\sqrt{68}$

x

2

11)

5

$\sqrt{25}$

x

12)

6

x

$\sqrt{40}$
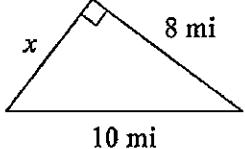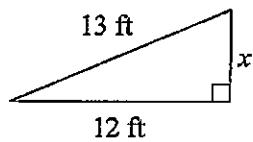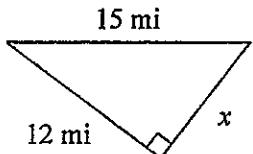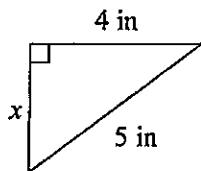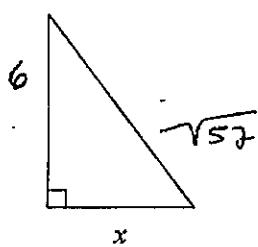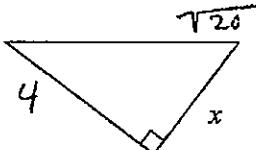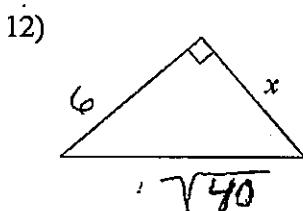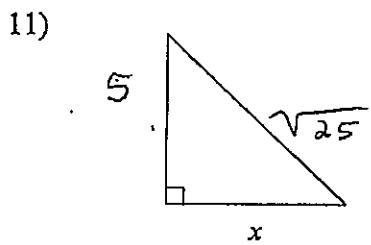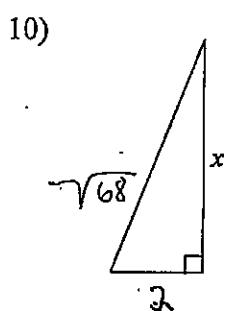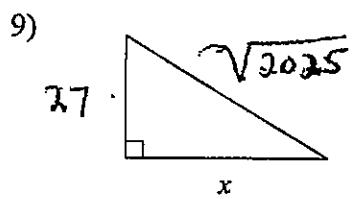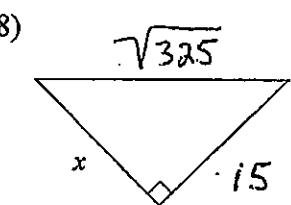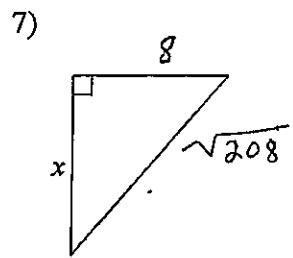
ACTIVITY 34

35	10	20	21	26	7
30	15	24	24	8	30
7	26	25	20	10	13
25	26	7	35	10	20
24	8	30	30	15	24
20	10	13	7	26	21

Right Triangle Rule

In a right triangle, the square of the length of the hypotenuse (longest side) equals the sum of the squares of the lengths of the legs (shorter sides).

B — hypotenuse — c
$a = 3$ units
$90°$
C — $b = 4$ units — A
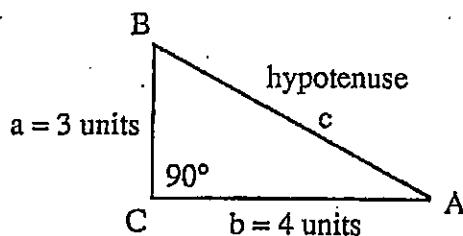
In triangle ABC, $c^2 = a^2 + b^2$
$$c^2 = 3^2 + 4^2$$
$$c^2 = 9 + 16$$
$$c^2 = 25$$
$$c = \sqrt{25}$$
$$c = 5$$

Find the length of each hypotenuse. Refer to the Table of Squares, if needed.

$b = 8$
$90°$
$a = 6$
c

$b = 12$
$90°$
$a = 5$
c

$b = 12$
c
$90°$
$a = 9$
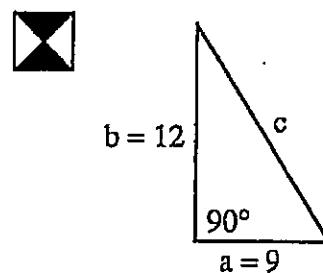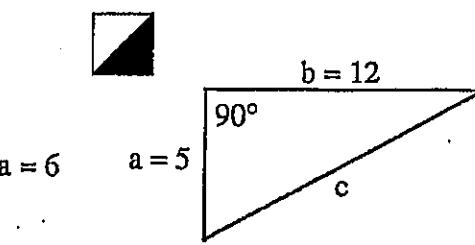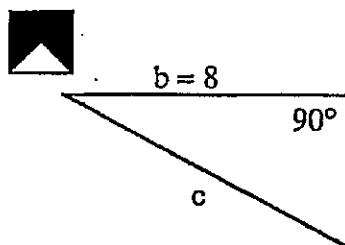
$a = 12$ units
$b = 16$ units
$c = \underline{\ ?\ }$ units

$a = 10$ units
$b = 24$ units
$c = \underline{\ ?\ }$ units

$a = 15$ units
$b = 20$ units
$c = \underline{\ ?\ }$ units

Find the missing length of a leg. Formulas: $a = \sqrt{c^2 - b^2}$ $b = \sqrt{c^2 - a^2}$

$b = 24$ units
$c = 25$ units
$a = \underline{\ ?\ }$ units

$a = 15$ units
$c = 17$ units
$b = \underline{\ ?\ }$ units

$b = 16$ units
$c = 34$ units
$a = \underline{\ ?\ }$ units

Find the missing length if each triangle is a right triangle.

?
30
18

?
29
20

21
28
?