

Name
Mr. Schlansky

Schlansky

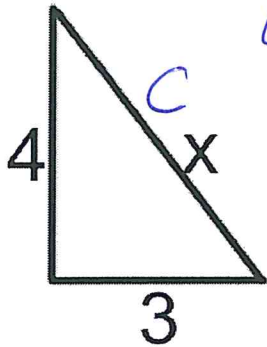
$a^2 + b^2 = c^2$
a, b legs
c hypotenuse

Date _____
Geometry

Pythagorean Theorem

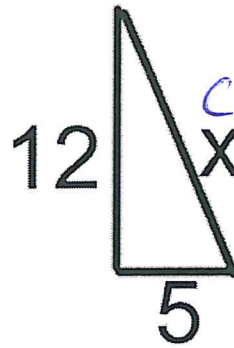
Find the missing side of each right triangle rounding to the nearest tenth if necessary

1.



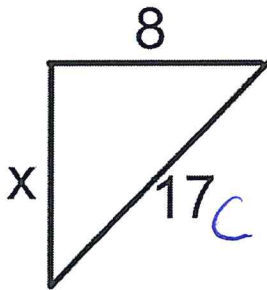
$$\begin{aligned} a^2 + b^2 &= c^2 \\ 3^2 + 4^2 &= x^2 \\ 9 + 16 &= x^2 \\ \sqrt{25} &= \sqrt{x^2} \\ 5 &= x \end{aligned}$$

2.



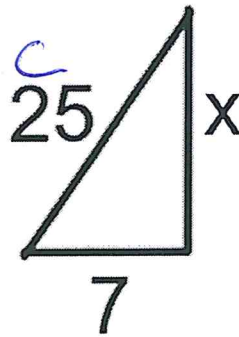
$$\begin{aligned} a^2 + b^2 &= c^2 \\ 5^2 + 12^2 &= x^2 \\ 25 + 144 &= x^2 \\ \sqrt{169} &= \sqrt{x^2} \\ 13 &= x \end{aligned}$$

3.



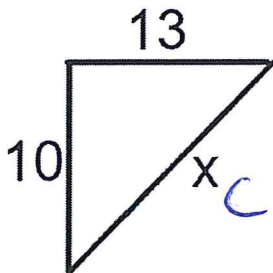
$$\begin{aligned} a^2 + b^2 &= c^2 \\ 8^2 + x^2 &= 17^2 \\ 64 + x^2 &= 289 \\ -64 & \quad -64 \\ \sqrt{x^2} &= \sqrt{225} \\ x &= 15 \end{aligned}$$

4.



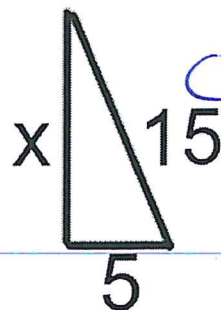
$$\begin{aligned} a^2 + b^2 &= c^2 \\ 7^2 + x^2 &= 25^2 \\ 49 + x^2 &= 625 \\ -49 & \quad -49 \\ \sqrt{x^2} &= \sqrt{576} \\ x &= 24 \end{aligned}$$

5.



$$\begin{aligned} a^2 + b^2 &= c^2 \\ 10^2 + 13^2 &= x^2 \\ 100 + 169 &= x^2 \\ \sqrt{269} &= \sqrt{x^2} \\ 16.4 &= x \end{aligned}$$

6.



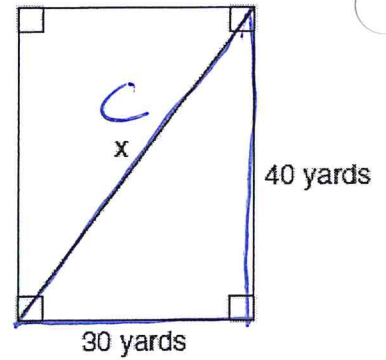
$$\begin{aligned} a^2 + b^2 &= c^2 \\ x^2 + 5^2 &= 15^2 \\ x^2 + 25 &= 225 \\ -25 & \quad -25 \\ \sqrt{x^2} &= \sqrt{200} \\ x &= 14.1 \end{aligned}$$

7. Tanya runs diagonally across a rectangular field that has a length of 40 yards and a width of 30 yards, as shown in the diagram below.

What is the length of the diagonal, in yards, that Tanya runs?

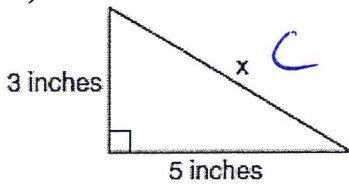
- 1) 50
 2) 60
 3) 70
 4) 80

$$\begin{aligned}
 a^2 + b^2 &= c^2 \\
 30^2 + 40^2 &= x^2 \\
 900 + 1600 &= x^2 \\
 \sqrt{2500} &= \sqrt{x^2} \\
 50 &= x
 \end{aligned}$$



8. What is the value of x , in inches, in the right triangle below?

- 1) $\sqrt{15}$
 2) 8
 3) $\sqrt{34}$
 4) 4



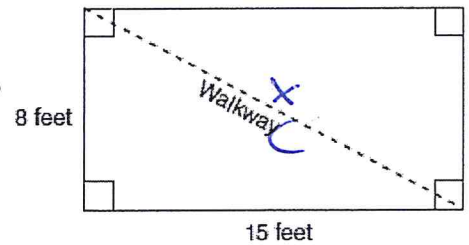
$$\begin{aligned}
 a^2 + b^2 &= c^2 \\
 3^2 + 5^2 &= x^2 \\
 9 + 25 &= x^2 \\
 \sqrt{34} &= \sqrt{x^2} \\
 x &= \sqrt{34}
 \end{aligned}$$

9. Nancy's rectangular garden is represented in the diagram below.

If a diagonal walkway crosses her garden, what is its length, in feet?

- 1) 17
 2) 22
 3) $\sqrt{161}$
 4) $\sqrt{529}$

$$\begin{aligned}
 a^2 + b^2 &= c^2 \\
 8^2 + 15^2 &= x^2 \\
 64 + 225 &= x^2 \\
 \sqrt{289} &= \sqrt{x^2} \\
 x &= 17
 \end{aligned}$$



10. The end of a dog's leash is attached to the top of a 5-foot-tall fence post, as shown in the diagram below. The dog is 7 feet away from the base of the fence post.

How long is the leash, to the nearest tenth of a foot?

- 1) 4.9
 2) 8.6
 3) 9.0
 4) 12.0

$$\begin{aligned}
 a^2 + b^2 &= c^2 \\
 5^2 + 7^2 &= x^2 \\
 25 + 49 &= x^2 \\
 \sqrt{74} &= \sqrt{x^2} \\
 8.6 &= x
 \end{aligned}$$

