

Find the length of the missing side.

$$90^2 + 120^2 = x^2$$

$$8100 + 14,400 = x^2$$

$$\sqrt{22,500} = \sqrt{x^2}$$

$$150 = x$$

Decide whether the measures can be the side lengths of a triangle. If so, classify the triangles as acute, obtuse, or right.

7, 13, 18

$$\checkmark \quad 7 + 13 = 20 > 18$$

$$7^2 + 13^2 \square 18^2$$

$$49 + 169 \square 324$$

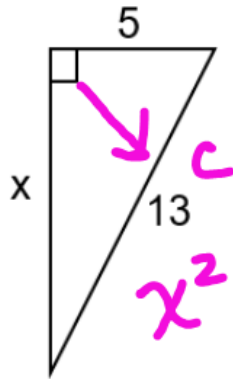
$$218 < 324$$

$$\boxed{\text{obtuse}}$$

Unit 5 Day 2 Converse of Pythagorean Theorem

Objective: TSW use Pythagorean Theorem and right triangle inequalities to solve problems.

1) Find the value of x.



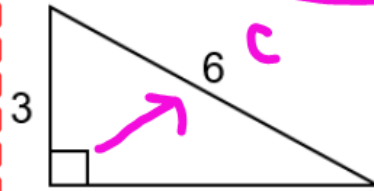
$$x^2 + 5^2 = 13^2$$

$$\begin{array}{r} x^2 + 25 = 169 \\ -25 \quad -25 \\ \hline \end{array}$$

$$\sqrt{x^2} = \sqrt{144}$$

$$x = 12$$

2) Find the value of x and simplify the radical.



$$x^2 + 3^2 = 6^2$$

$$\begin{array}{r} x^2 + 9 = 36 \\ -9 \quad -9 \\ \hline \end{array}$$

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

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

$$\begin{array}{c} 3 \quad 9 \\ \parallel \quad / \\ 3 \quad 3 \end{array}$$

3) Find the value of x and round to the nearest tenth.



$$x^2 + 9^2 = 17^2$$

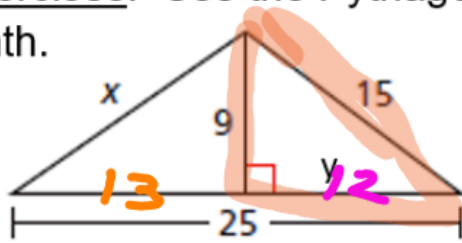
$$\begin{array}{r} x^2 + 81 = 289 \\ -81 \quad -81 \\ \hline \end{array}$$

$$\sqrt{x^2} = \sqrt{208}$$

$$x = 14.4$$

Exercises: Use the Pythagorean Theorem to find the value of x and y to the nearest tenth.

4)



$$\begin{array}{r} 25 \\ -12 \\ \hline 13 \end{array}$$

$$9^2 + y^2 = 15^2$$

$$81 + y^2 = 225$$

$$\begin{array}{r} 81 + y^2 = 225 \\ -81 \quad -81 \\ \hline y^2 = 144 \end{array}$$

$$\boxed{y = 12}$$

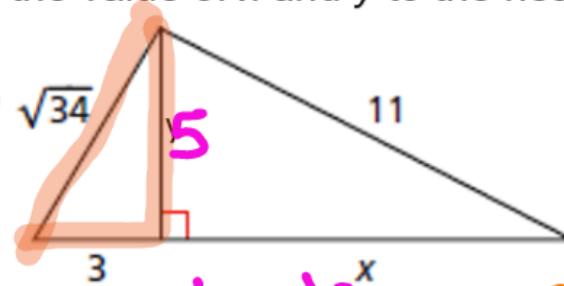
$$9^2 + 13^2 = x^2$$

$$81 + 169 = x^2$$

$$\sqrt{250} = \sqrt{x^2}$$

$$\boxed{x = 15.8}$$

5)



$$3^2 + y^2 = (\sqrt{34})^2$$

$$9 + y^2 = 34$$

$$\begin{array}{r} 9 + y^2 = 34 \\ -9 \quad -9 \\ \hline y^2 = 25 \end{array}$$

$$\sqrt{y^2} = \sqrt{25}$$

$$\boxed{y = 5}$$

$$x^2 + 5^2 = 11^2$$

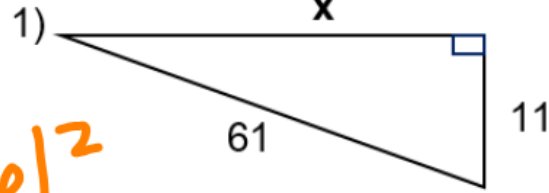
$$x^2 + 25 = 121$$

$$\begin{array}{r} x^2 + 25 = 121 \\ -25 \quad -25 \\ \hline x^2 = 96 \end{array}$$

$$\sqrt{x^2} = \sqrt{96}$$

$$\boxed{x = 9.8}$$

Assignment Unit 5 Day 2

Guided PracticeFind x :

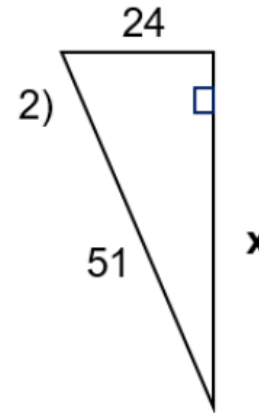
$$x^2 + 11^2 = 61^2$$

$$x^2 + 121 = 3721$$

$$\begin{array}{r} -121 \quad -121 \\ \hline \end{array}$$

$$\sqrt{x^2} = \sqrt{3600}$$

$$\boxed{x = 60}$$



$$x^2 + 24^2 = 51^2$$

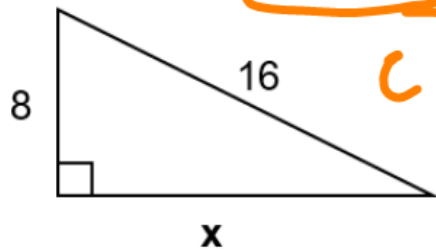
$$x^2 + 576 = 2601$$

$$\begin{array}{r} -576 \quad -576 \\ \hline \end{array}$$

$$\sqrt{x^2} = \sqrt{2025}$$

$$\boxed{x = 45}$$

3) Find x . Simplify the radicals



$$x^2 + 8^2 = 16^2$$

$$x^2 + 64 = 256$$

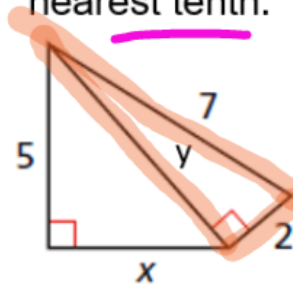
$$\begin{array}{r} -64 \\ -64 \end{array}$$

$$\sqrt{x^2} = \sqrt{192}$$

$$\begin{array}{r} \sqrt{} \\ 2 96 \\ 48 \\ 12 \\ 4 3 \end{array}$$

$$x = 8\sqrt{3}$$

4) Find the variables. Round to the nearest tenth.



$$y^2 + 2^2 = 7^2$$

$$y^2 + 4 = 49$$

$$\begin{array}{r} -4 \\ -4 \end{array}$$

$$\sqrt{y^2} = \sqrt{45}$$

$$y = 6.7$$

$$5^2 + x^2 = (\sqrt{45})^2$$

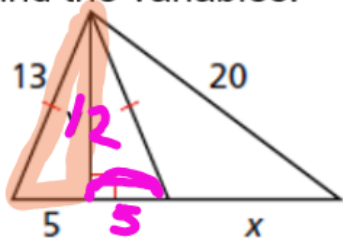
$$25 + x^2 = 45$$

$$\begin{array}{r} -25 \\ -25 \end{array}$$

$$\sqrt{x^2} = \sqrt{20}$$

$$x = 4.5$$

5) Find the variables.



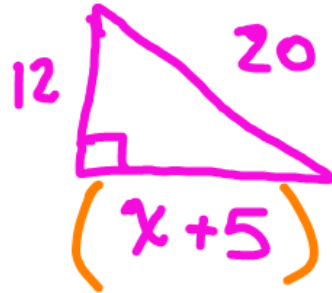
$$5^2 + y^2 = 13^2$$

$$25 + y^2 = 169$$

$$\begin{array}{r} -25 \\ \hline \end{array}$$

$$\sqrt{y^2} = \sqrt{144}$$

$$\boxed{y = 12}$$



$$(x+5)^2 + 12^2 = 20^2$$

$$(x+5)^2 + 144 = 400$$

$$\begin{array}{r} -144 \\ \hline \end{array}$$

$$\sqrt{(x+5)^2} = \sqrt{256}$$

$$x+5 = 16$$

$$\begin{array}{r} -5 \\ \hline \end{array}$$

$$\boxed{x = 11}$$