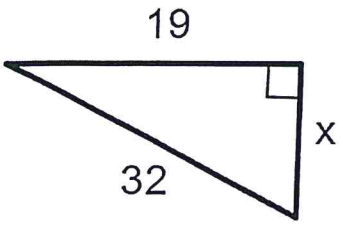
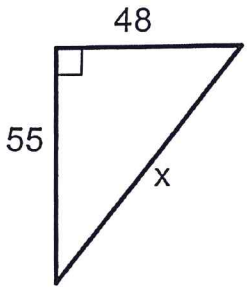
Algebra 1 Bellwork Tuesday, June 7, 2016

1. Find the lengths of the missing sides to the nearest tenth.

a)

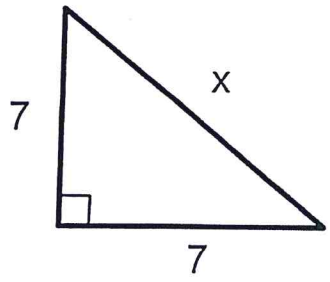


b)

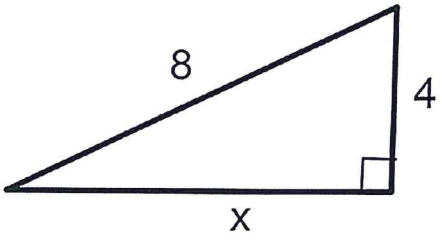


2. Find the EXACT value of each missing side.

a)



b)



3. The set of three numbers represents sides of a triangle. Does each form a right triangle?

a) 15, 20, 25

b) 14, 48, 51

4. A 12 foot long laddder is placed against a wall so that the bottom of the ladder is 4 feet from the wall. How high up the wall can the ladder reach?

5. Find the third number in this Pythagorean Triple. 143, 145, _____

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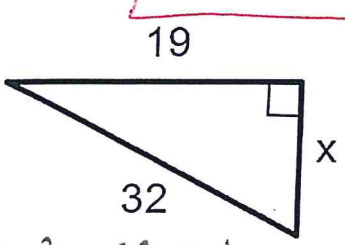
1. Find the lengths of the missing sides to the nearest tenth.

a)

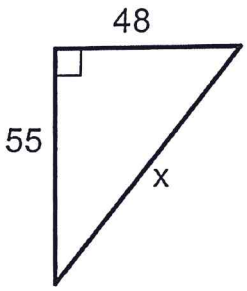


$x = 25.7$

$32^2 = 19^2 + x^2$

$\sqrt{32^2 - 19^2} = \sqrt{x^2}$

b)

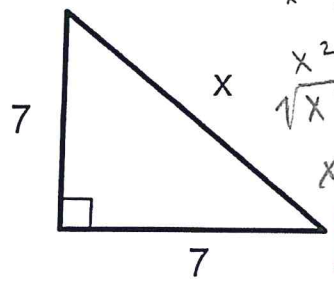


$\sqrt{x^2} = \sqrt{55^2 + 48^2}$

$x = 73$

2. Find the EXACT value of each missing side.

a)



$x^2 = 7^2 + 7^2$

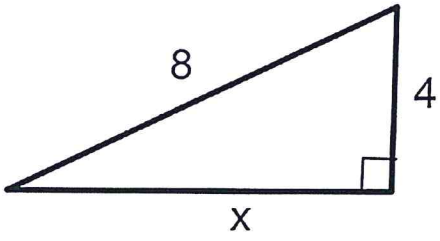
$x^2 = 49 + 49$

$\sqrt{x^2} = \sqrt{98}$

$x = \sqrt{49 \cdot 2}$

$x = 7\sqrt{2}$

b)



$8^2 = x^2 + 4^2$

$8^2 - 4^2 = x^2$

$\sqrt{48} = \sqrt{x^2}$

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

$x = 4\sqrt{3}$

3. The set of three numbers represents sides of a triangle. Does each form a right triangle?

a) 15, 20, 25

Yes

$25^2 \stackrel{?}{=} 20^2 + 15^2$

$625 \stackrel{?}{=} 400 + 225$

$625 = 625$ ✓

b) 14, 48, 51

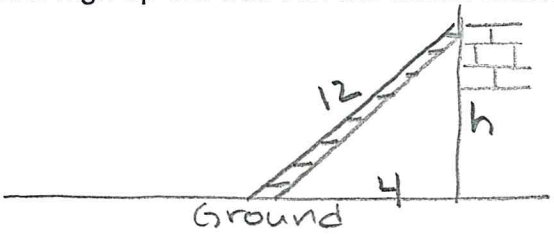
NO

$51^2 \stackrel{?}{=} 14^2 + 48^2$

$2601 = 196 + 2304$

$2601 \neq 2500$

4. A 12 foot long laddder is placed against a wall so that the bottom of the ladder is 4 feet from the wall. How high up the wall can the ladder reach?



$12^2 = 4^2 + h^2$

$144 = 16 + h^2$

$\sqrt{128} = \sqrt{h^2}$

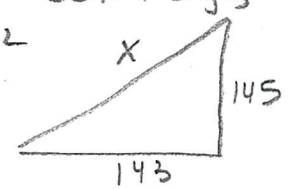
$h = 11.3$ ft

5. Find the third number in this Pythagorean Triple. 143, 145, 24

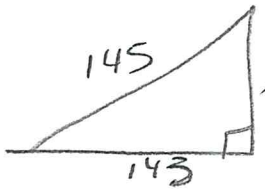
either these are both legs

$\sqrt{x^2} = \sqrt{145^2 + 143^2}$

$x = 203.65$ ✗



or these are the hypot & a leg



$145^2 = 143^2 + x^2$

$\sqrt{145^2 - 143^2} = \sqrt{x^2}$ 1

$x = 24$ ✓