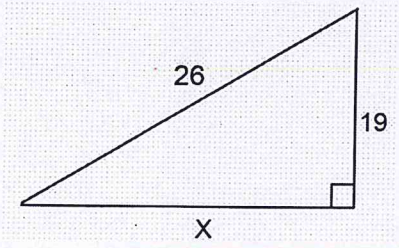
Bellwork Geo Friday, March 20, 2020

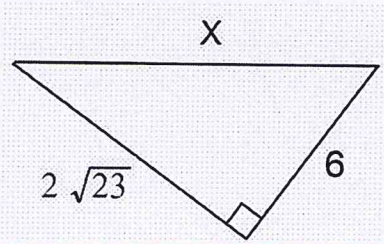
This bellwork is review of problems from Sec 8-1

1. Find the value of x in simplified radical form.

a)



b)



2. All three sides of a right triangle are whole numbers. Two of the sides are given, find the third side. In other words, find the third number of each Pythagorean Triple.

$72, 75,$_____

3. Each group of numbers represents the lengths of the sides of a triangle. Determine if each triangle is Right, Acute, or Obtuse.

a) $16, 30, 37$

b) $24, 45, 49$

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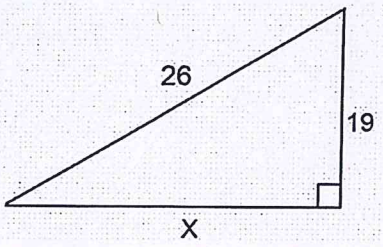
Answers

1. Find the value of x in simplified radical form.

a)



$26^2 = x^2 + 19^2$

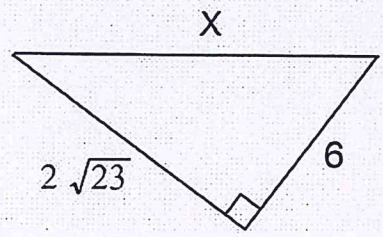
$-19^2 \quad -19^2$

$x^2 = 315$

$x = \sqrt{315} = \sqrt{9 \cdot 35}$

$x = 3\sqrt{35}$

b)



$x^2 = 6^2 + (2\sqrt{23})^2$

$x^2 = 36 + 4 \cdot 23$

$x^2 = 128$

$x = \sqrt{128} = \sqrt{64 \cdot 2}$

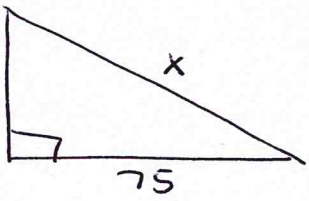
$x = 8\sqrt{2}$

2. All three sides of a right triangle are whole numbers. Two of the sides are given, find the third side. In other words, find the third number of each Pythagorean Triple.

missing side is either the hypotenuse or a leg.

72, 75, _____

hypotenuse ?



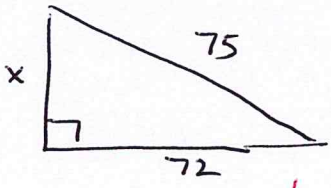
$x^2 = 72^2 + 75^2$

$x = \sqrt{72^2 + 75^2}$

$x = 103.9766$

NO ✗

leg ?



Yes

$x^2 + 72^2 = 75^2$

$x^2 = 75^2 - 72^2$

$x = \sqrt{75^2 - 72^2}$

$x = 21$ ✓

3. Each group of numbers represents the lengths of the sides of a triangle. Determine if each triangle is Right, Acute, or Obtuse.

a) 16, 30, 37 (c)

$c^2 = 37^2 = 1369$

$a^2 + b^2 = 16^2 + 30^2 = 1156$

$1369 > 1156$

$c^2 > a^2 + b^2$ "HYPOT" is too BIG

OBTUSE Δ

b) 24, 45, 49 (c)

$c^2 = 49^2 = 2401$

$a^2 + b^2 = 24^2 + 45^2 = 2601$

$2401 < 2601$

$c^2 < a^2 + b^2$ "HYPOT" is too SMALL

ACUTE Δ