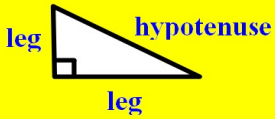
8-2 Pythagorean Theorem

Jan 31

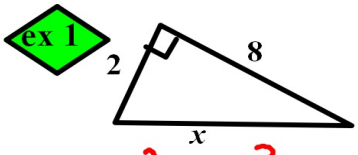
std. 15.0

Pythagorean Theorem

In a right triangle,
$leg^2 + leg^2 = hypotenuse^2$



ex 1

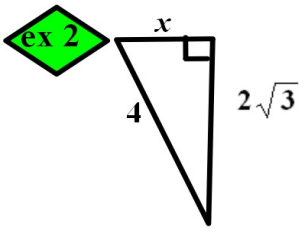


$2^2 + 8^2 = x^2$

$\sqrt{68} = \sqrt{x^2}$

$\sqrt{4}\sqrt{17} = x = 2\sqrt{17}$

ex 2



$x = 2$

$x^2 + (2\sqrt{3})^2 = 4^2$

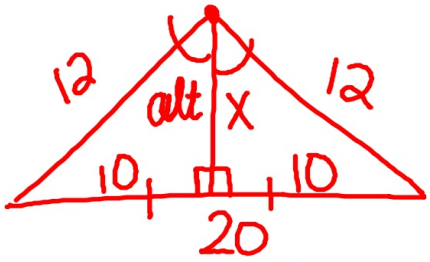
$x^2 + 2^2 \cdot \sqrt{3}^2 = 16$

$x^2 + 4 \cdot 3 = 16$

$x^2 + 12 = 16$

$\sqrt{x^2} = \sqrt{4}$

ex 3 In an isosceles triangle the base is 20 and each leg is 12. Find the altitude to the base.



$10^2 + x^2 = 12^2$

$100 + x^2 = 144$

$\sqrt{x^2} = \sqrt{44}$

$\sqrt{4}\sqrt{11}$

$2\sqrt{11}$