Notes for Lesson 8-2: The Pythagorean Theorem

What is the Pythagorean Theorem?

$a^2 + b^2 = c^2$

When should the Pythagorean Theorem be used?

with right Δs only
helps find length of a missing sides
given the lengths of other 2 sides

Try the following problems and simplify the roots of your answer when necessary.

1) a = 3 b = 4 c = 5

$3^2 + 4^2 = c^2$
$9 + 16 = c^2$
$\sqrt{25} = \sqrt{c^2}$

2) a = 10 b = 13 c =

$10^2 + 13^2 = c^2$
$100 + 169 = c^2$
$\sqrt{269} = \sqrt{c^2}$
$c = 16.4$

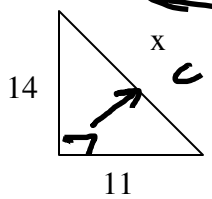
3) a = 12 b = c = 17

$12^2 + b^2 = 17^2$
$144 + b^2 = 289$
$\sqrt{b^2} = \sqrt{145}$
$b = 12.04$

4) a = b = 20 c = 32

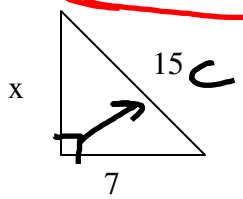
$a^2 + 20^2 = 32^2$
$a^2 + 400 = 1024$
$\sqrt{a^2} = \sqrt{624}$
$a = 24.8$

5)



$14^2 + 11^2 = x^2$
$196 + 121 = x^2$
$\sqrt{317} = \sqrt{x^2}$
$17.8 = x$

6)



$x^2 + 7^2 = 15^2$
$x^2 + 49 = 225$
$\sqrt{x^2} = \sqrt{176}$
$x = 13.3$