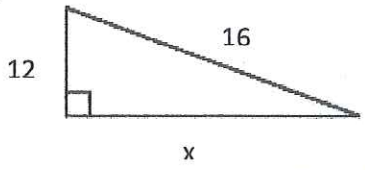
Geometry
7.2 & 7.3 Quiz Review

Name: Key

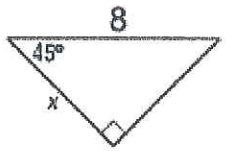
Find x. Leave answers as simplified exact answers.

1.



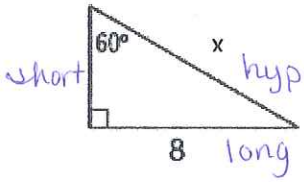
$x^2 + 12^2 = 16^2$
$x^2 + 144 = 256$
$x^2 = 112$
$x = \sqrt{112}$
$= \sqrt{16}\cdot\sqrt{7}$
$= 4\sqrt{7}$

2.



$\text{leg} = \frac{\text{hyp}}{\sqrt{2}}$
$= \frac{8}{\sqrt{2}}\cdot\frac{\sqrt{2}}{\sqrt{2}}$
$= \frac{8\sqrt{2}}{2} = 4\sqrt{2}$

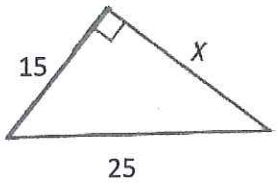
3.



$\text{short} = \frac{\text{long}}{\sqrt{3}} = \frac{8}{\sqrt{3}}\cdot\frac{\sqrt{3}}{\sqrt{3}} = \frac{8\sqrt{3}}{3}$

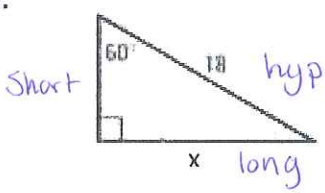
$\text{hyp} = \text{short}\cdot 2 = \frac{8\sqrt{3}}{3}\cdot 2 = \frac{16\sqrt{3}}{3}$

4.



$x^2 + 15^2 = 25^2$
$x^2 + 225 = 625$
$x^2 = 400$
$x = 20$

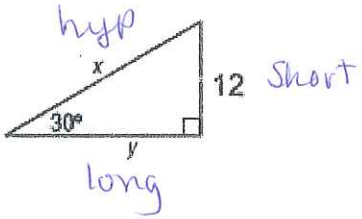
5.



$\text{short} = \frac{\text{hyp}}{2} = \frac{18}{2} = 9$
$\text{long} = \text{short}\cdot\sqrt{3} = 9\sqrt{3}$

Find x and y. Leave answers as simplified exact answers.

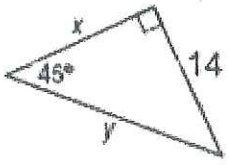
6.



$x = \text{hyp} = \text{short}\cdot 2 = 12\cdot 2 = 24$

$y = \text{long} = \text{short}\cdot\sqrt{3} = 12\sqrt{3}$

7.



$\text{leg} = \text{leg}$
$x = 14$

$y = \text{hyp} = \text{leg}\cdot\sqrt{2}$
$= 14\sqrt{2}$

Determine whether each set of measures can be the measures of the sides of a right triangle. Then state whether they form a Pythagorean triple. <u>You MUST show work to get credit!</u>

8. 24, 25, 7

$24^2 + 7^2 = 25^2$

$576 + 49 = 625$

$625 = 625$

Yes - R. Δ

Yes - P.T

9. $\frac{1}{3}, \frac{2\sqrt{2}}{3}, 1$

$\left(\frac{1}{3}\right)^2 + \left(\frac{2\sqrt{2}}{3}\right)^2 = 1^2$

$\frac{1}{9} + \frac{8}{9} = 1$

$\frac{9}{9} = 1$

Yes RT Δ

No P.T.

(not whole #s!)

Determine whether ΔABC is a right triangle for the given vertices. <u>Explain.</u>

10. $A(-2, 1)$, $B(3, -1)$, $C(-4, -4)$

$AB = \sqrt{(-2-3)^2 + (1+1)^2} = \sqrt{25+4} = \sqrt{29}$

$BC = \sqrt{(3+4)^2 + (-1+4)^2} = \sqrt{49+9} = \sqrt{58}$

$AC = \sqrt{(-2+4)^2 + (1+4)^2} = \sqrt{4+25} = \sqrt{29}$

$(\sqrt{29})^2 + (\sqrt{29})^2 = (\sqrt{58})^2$

$29 + 29 = 58$

$58 = 58$

Since the side lengths satisfy the pyth theorem, this is a right triangle.