Algebra 1 Bellwork Tuesday, May 26, 2015

1. Simplify each.

a) $(4+8\sqrt{3})(3-2\sqrt{3})$

b) $\sqrt{20g^{16}h^5} \cdot \sqrt{12gh^6}$

2. Rationalize this denominator. $\dfrac{14a^3}{\sqrt{6a^5b^3}}$

3. Do the three sides form a right triangle?

a) 16, 30, 34

b) 11, 60, 61

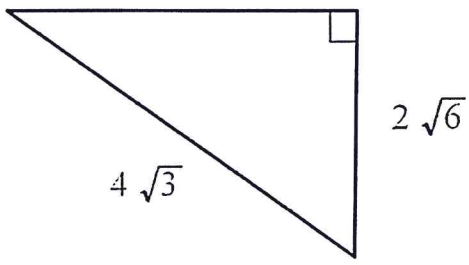
4. Find the third number in each Pythagorean Triple.

a) 84,85,____

b) 57, 176,____

5. You sail your boat due South for 9.2 miles. Your brother sails his boat due East for 5.4 miles. How far apart are you? Round to the nearest tenth.

6. Find the exact length of the missing sides of this right triangle.



7. You have a ladder that is 12 feet long. Your cat is stuck 11 feet up in a tree. The bottom of the ladder must be 4 feet from the bottom of the tree. Will the top fo the ladder reach the spot where the cat is stuck?

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ANSWERS

1. Simplify each.

a) $(4+8\sqrt{3})(3-2\sqrt{3})$

	4	$+8\sqrt{3}$
3	12	$+24\sqrt{3}$
$-2\sqrt{3}$	$-8\sqrt{3}$	-48

$= -36+16\sqrt{3}$

b) $\sqrt{20g^{16}h^5}\cdot\sqrt{12gh^6} = \sqrt{240\,g^{17}h^{11}}$

$4.5 \quad 4.3$

$4^2 \cdot 5 \cdot 3$

$= 4g^8h^5\sqrt{15gh}$

2. Rationalize this denominator.

$\frac{14a^3}{\sqrt{6a^5b^3}} \cdot \frac{\sqrt{6ab}}{\sqrt{6ab}} = \frac{14a^3\sqrt{6ab}}{6a^3b^2} = \frac{7\sqrt{6ab}}{3b^2}$

$\sqrt{6^2a^6b^4}$

3. Do the three sides form a right triangle?

a) 16, 30, 34

Yes

b) 11, 60, 61

Yes

4. Find the third number in each Pythagorean Triple.

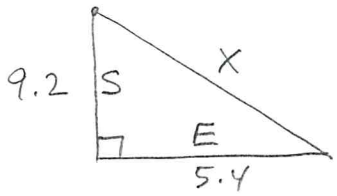
a) 84,85, 13

b) 57, 176, 185

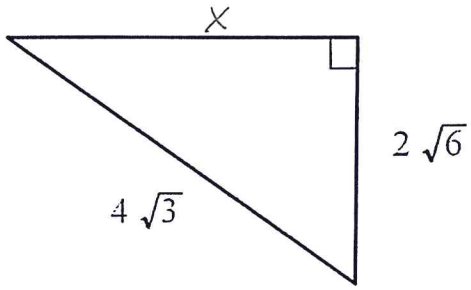
5. You sail your boat due South for 9.2 miles. Your brother sails his boat due East for 5.4 miles. How far apart are you? Round to the nearest tenth.

$x^2 = 9.2^2 + 5.4^2$

$x = 10.7$ mi



6. Find the exact length of the missing sides of this right triangle.



$x^2 + (2\sqrt{6})^2 = (4\sqrt{3})^2$

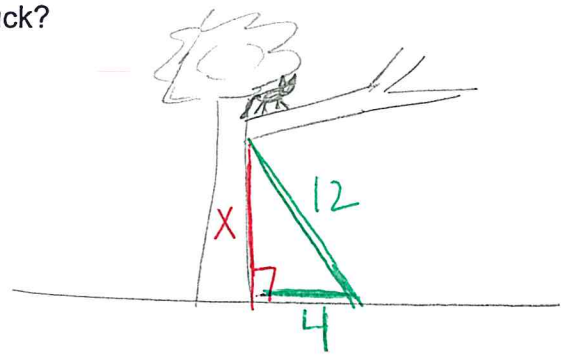
$x^2 + 24 = 48$

$x^2 = 24$

$x = \sqrt{24}$ (4.9)

$x = 2\sqrt{6}$

7. You have a ladder that is 12 feet long. Your cat is stuck 11 feet up in a tree. The bottom of the ladder must be 4 feet from the bottom of the tree. Will the top fo the ladder reach the spot where the cat is stuck?



Yes, the ladder can reach up to 11.3 ft high in the tree

$x^2 + 4^2 = 12^2$

$x^2 + 16 = 144$

$x^2 = 128$

$x = 11.3$