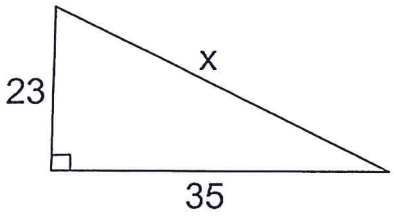
# Algebra 1 Bellwork Thursday, May 21, 2015

1. Rationalize each denominator. Simplify as much as possible.

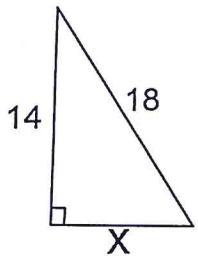
a) $\frac{15d^4}{\sqrt{6d}}$

b) $\frac{14m^3}{\sqrt{20m^5}}$

2. Find the missing side to the nearest hundredth.




3. Find the exact value of the missing side.




4. You need to build a ramp from the driveway up to your side door. The door is 3 feet above the driveway and the end of the ramp will be 9 feet from the house. Find the length of a board that is needed to build the ramp. Round to the nearest tenth.

5. Do the three lengths form a right triagle?

a) 11, 60, 61

b) 7, 22, 23

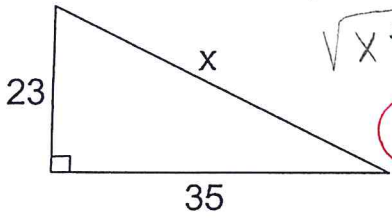
# Algebra 1 Bellwork Thursday, May 21, 2015 ANSWERS!

1. Rationalize each denominator. Simplify as much as possible.

a) $\frac{15d^4}{\sqrt{6d}} \cdot \frac{\sqrt{6d}}{\sqrt{6d}} = \frac{15d^4\sqrt{6d}}{6d} = \frac{5d^3\sqrt{6d}}{2}$

b) $\frac{14m^3}{\sqrt{20m^5}} \cdot \frac{\sqrt{5m}}{\sqrt{5m}} = \frac{14m^3\sqrt{5m}}{\sqrt{100m^6}} = \frac{14m^3\sqrt{5m}}{10m^3} = \frac{7\sqrt{5m}}{5}$

2. Find the missing side to the nearest hundredth.

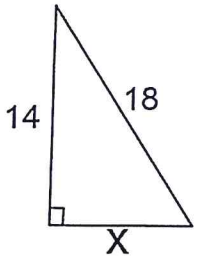



$x^2 = 23^2 + 35^2$

$\sqrt{x^2} = \sqrt{1754}$

$x = 41.88$

3. Find the exact value of the missing side.




$18^2 = 14^2 + x^2$

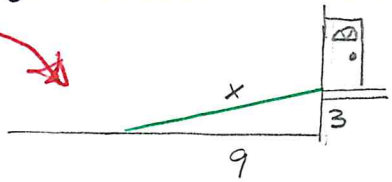
$324 = 196 + x^2$

$\sqrt{x^2} = \sqrt{128}$

$64 \cdot 2$

$x = 8\sqrt{2}$

4. You need to build a ramp from the driveway up to your side door. The door is 3 feet above the driveway and the end of the ramp will be 9 feet from the house. Find the length of a board that is needed to build the ramp. Round to the nearest tenth.




$x^2 = 3^2 + 9^2$

$\sqrt{x^2} = \sqrt{90}$

$x \approx 9.5$ ft

5. Do the three lengths form a right triagle?

a) 11, 60, 61 YES

$11^2 + 60^2 \stackrel{?}{=} 61^2$

$121 + 3600 \stackrel{?}{=} 3721$

$3721 = 3721$ ✓

b) 7, 22, 23 NO

$7^2 + 22^2 \stackrel{?}{=} 23^2$

$49 + 484 \stackrel{?}{=} 529$

$533 \neq 529$