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

$a = b$, so: $a^2 + a^2 = c^2$

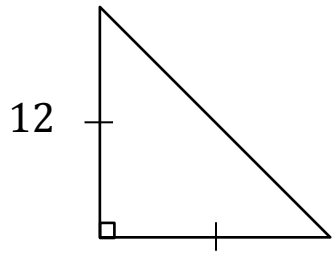
$12^2 + 12^2 = c^2$

$144 + 144 = c^2$

$288 = c^2$

$\sqrt{288} = c$

$17.0 = c$



(tick marks mean side lengths are congruent, or equal)

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

$a = b$, so: $a^2 + \_\_\_ = c^2$

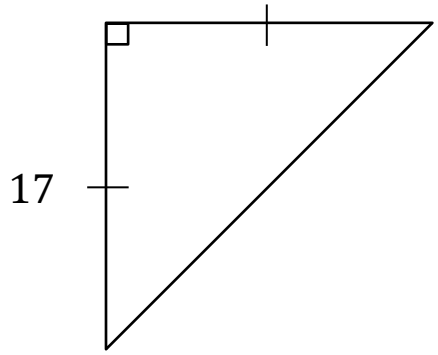
$\_\_\_\_ + 17^2 = c^2$

$289 + \_\_\_\_ = c^2$

$\_\_\_\_ = c^2$

$\sqrt{578} = c$

$24.0 = c$



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

$a = b$, so: $\_\_\_ + \_\_\_ = c^2$

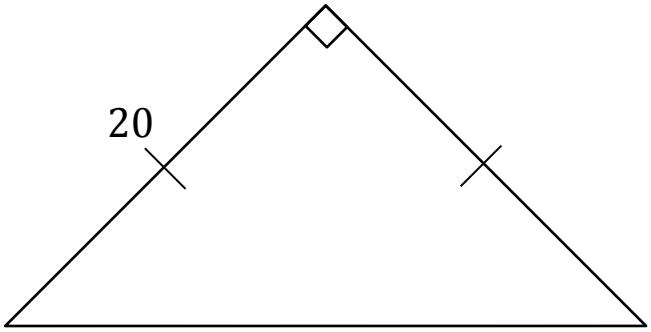
$20^2 + \_\_\_\_ = c^2$

$\_\_\_\_ + \_\_\_\_ = c^2$

$800 = c^2$

$\sqrt{} = c$

$\_\_\_\_ = c$



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

$a = b$, so: $a^2 + a^2 = \_\_\_\_$

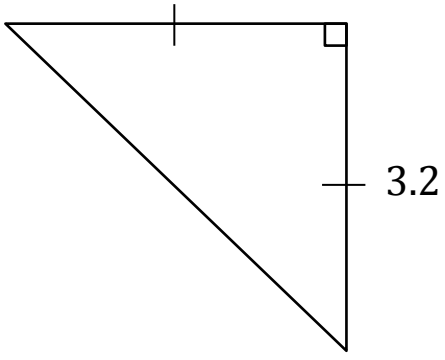
$3.2^2 + 3.2^2 = \_\_\_\_$

$\_\_\_\_ + \_\_\_\_ = \_\_\_\_$

$\_\_\_\_ = \_\_\_\_$

$\_\_\_\_ = c$

$\_\_\_\_ = \_\_\_\_$



Another Method

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

$a = b$, so: $2(a^2) = c^2$

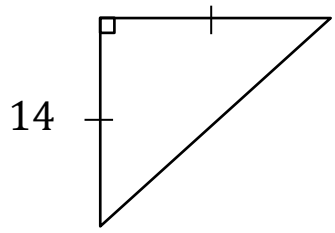
$2(14^2) = c^2$

$2(196) = c^2$

$392 = c^2$

$\sqrt{392} = c$

$19.8 = c$



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

$a = b$, so: $2(\_\_\_\_) = c^2$

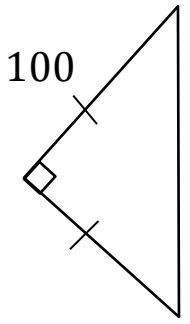
$\_\_\_(\_\_\_\_^2) = \_\_\_\_$

$2(\_\_\_\_) = c^2$

$\_\_\_\_\_ = c^2$

$\sqrt{20{,}000} = c$

$\_\_\_\_\_ = c$



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

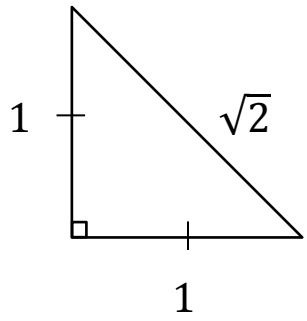
$a = b$, so: $a^2 + a^2 = c^2$

$1^2 + 1^2 = c^2$

$1 + 1 = c^2$

$2 = c^2$

$\sqrt{2} = c$



In all isosceles right triangles, the ration of the legs to the hypotenuse is $1{:}1{:}\sqrt{2}$. In addition to the 90° angle, the other two angles are each 45°. To find the hypotenuse of a right isosceles triangle, you can multiply the length of either leg by $\sqrt{2}$. For example, in problem 2 above, which has a triangle with legs of 17 units, we found the hypotenuse to be 24.0. On your calculator, multiply $\sqrt{2}$ x 17 to get: 24.0416.

Use this method to find the hypotenuse of right isosceles triangles with legs which measure:

28.6 _____ 135.89 _____ 13,480 _____
