3-4-5 Rule Quiz Name _____ Key _____

1. If a tiny house's trailer dimensions are 8' x 28', what would be the measure of the hypotenuse to the nearest 1/8 inch?

$$c^2 = a^2 + b^2$$
$$c^2 = 8^2 + 28^2$$
$$c^2 = 64 + 784$$
$$\sqrt{c^2} = \sqrt{848}$$
$$c = 29.12$$
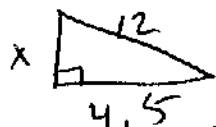
$$.12 \, ft \cdot \frac{12 \, in}{1 \, ft} = 1.44 \, in$$
$$.44 \, in \div \frac{1}{8} \, in = 3.52$$
Round to 4 $\frac{4}{8}$ or $\frac{1}{2}$ in

29' 1 ½ "

2. The base of a 12-foot ladder is placed 4.5 feet from the side of a house. How far up the side of the house will the ladder reach to the nearest tenth of a foot.
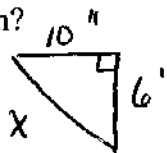
$$c^2 = a^2 + b^2$$
$$12^2 = x^2 + 4.5^2$$
$$144 = x^2 + 20.25$$
$$-20.25 \qquad -20.25$$
$$\sqrt{x^2} = \sqrt{123.75}$$

$$\boxed{x = 11.1 \, ft}$$

11.1 ft

3. You are designing and creating a metal corbel in the shape of a right triangle for a kitchen island to help support a countertop. The corbel has sides of 10" and 6". What is the length of the diagonal to the nearest 1/16 inch?
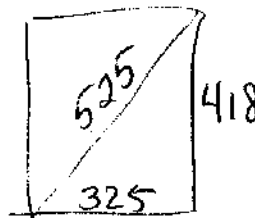
$$c^2 = a^2 + b^2$$
$$x^2 = 10^2 + 6^2$$
$$x^2 = 100 + 36$$
$$\sqrt{x^2} = \sqrt{136}$$
$$x = 11.66"$$
$$.66 \div \left(\frac{1}{16}\right) = 10.56$$
$$11/16"$$

11 $\frac{11}{16}$ "

4. A window frame has a height of 418 cm, a length of 325 cm, and diagonals with lengths of 529 cm. Is the window frame "squared"?

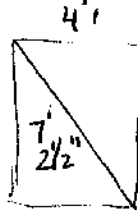$$c^2 = a^2 + b^2$$
$$529^2 = 418^2 + 325^2$$
$$279841 = 174724 + 105625$$
$$279841 < 280349$$

No ∠ is less than 90° (acute)

5. You have a rectangular steel plate with dimensions of 4' x 6' and a diagonals of 7'2½'. Is the plate "squared?"

$$4' \cdot \frac{12"}{1'} = 48"$$
$$6' \cdot \frac{12"}{1'} = 72"$$
$$7'2\frac{1}{2}" = 7 \cdot \frac{12"}{1'} = 86.5"$$
$$84" + 2\frac{1}{2}$$

$$c^2 = a^2 + b^2$$
$$86.5^2 = 48^2 + 72^2$$
$$7482.25 < 7488$$

No ∠ is less than 90° acute

6. Find the missing side length.

X   14

7
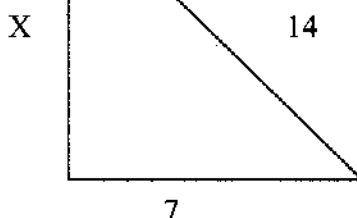
$$c^2 = a^2 + b^2$$
$$14^2 = x^2 + 7^2$$
$$196 = x^2 + 49$$
$$-49 \qquad -49$$
$$\sqrt{147} = \sqrt{x^2}$$
$$x = 12.12$$

12.1