

Name

KEY

Period:

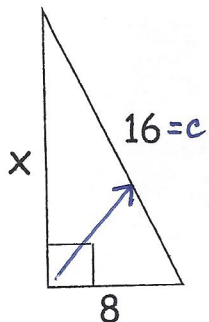
Date

Pythagorean Theorem Plus

REVIEW

Find the missing side of the following right triangles. Round to the nearest tenth.

1)



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

$$x^2 + 8^2 = 16^2$$

$$x^2 + 64 = 256$$

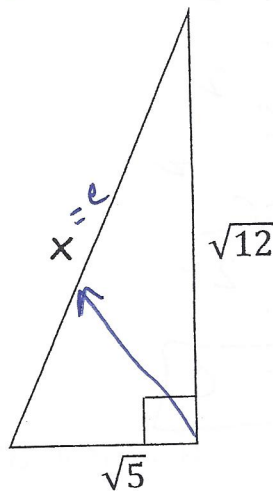
$$\begin{array}{r} -64 \\ -64 \end{array}$$

$$\sqrt{x^2} = \sqrt{192}$$

$$x = 13.85$$

$$\boxed{x = 13.4}$$

2)



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

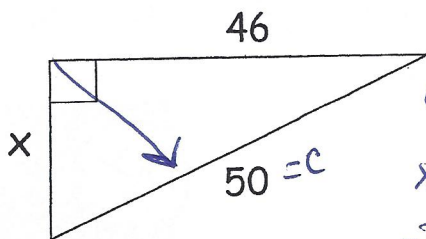
$$(\sqrt{12})^2 + (\sqrt{5})^2 = c^2$$

$$12 + 5 = c^2$$

$$\sqrt{17} = \sqrt{c^2}$$

$$\boxed{4.1 = c}$$

3)



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

$$x^2 + 46^2 = 50^2$$

$$x^2 + 2116 = 2500$$

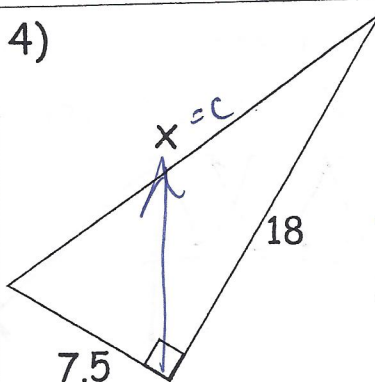
$$\begin{array}{r} -2116 \\ -2116 \end{array}$$

$$\sqrt{x^2} = \sqrt{384}$$

$$x = 19.59$$

$$\boxed{x = 19.6}$$

4)



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

$$7.5^2 + 18^2 = c^2$$

$$56.25 + 324 = c^2$$

$$\sqrt{380.25} = \sqrt{c^2}$$

$$\boxed{19.5 = c}$$

Determine whether each triangle with sides of given lengths is a right triangle.

Determine biggest side → Biggest side hypotenuse

5) 85 in., 204 in., 221 in.

$$85^2 + 204^2 \stackrel{?}{=} 221^2$$

$$48841 = 48841$$

yes

7) 7 m, 5 m, 4 m

$$4^2 + 5^2 \stackrel{?}{=} 7^2$$

$$16 + 25 = 49$$

$$41 \neq 49$$

NO

6) 6.5 cm, 16.9 cm, 15.6 cm

$$6.5^2 + 15.6^2 \stackrel{?}{=} 16.9^2$$

$$285.61 = 285.61$$

yes

8) 2 yd, $\sqrt{21}$ yd, 5 yd

$$2^2 + (\sqrt{21})^2 \stackrel{?}{=} 5^2$$

$$4 + 21 = 25$$

$$25 = 25$$

yes

9) Crystal wants to build a ramp on which to jump her bicycle. She wants it to rise 4 feet over a horizontal distance of 20 feet. How long will the ramp be? Round to the nearest tenth.

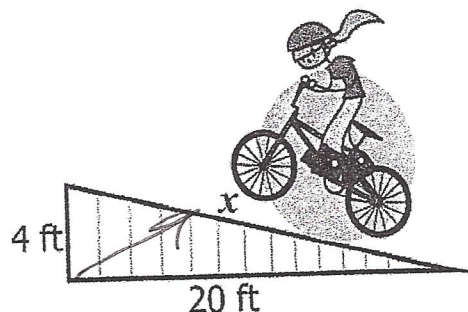
$$a^2 + b^2 = c^2$$

$$4^2 + 20^2 = c^2$$

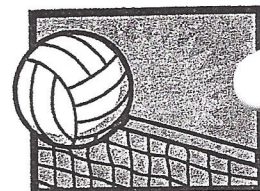
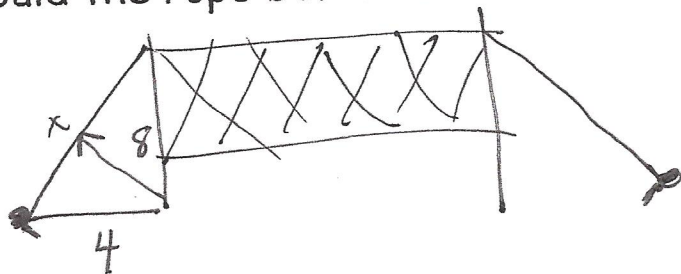
$$16 + 400 = c^2$$

$$\sqrt{416} = \sqrt{c^2}$$

$$20.4 = c$$



10) You are setting up a volleyball net using two 8 foot poles to hold up the net. You are going to attach each pole to a stake in the ground using a piece of rope. Each stake should be 4 feet from the pole. How long should the rope be? Round to the nearest tenth.



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

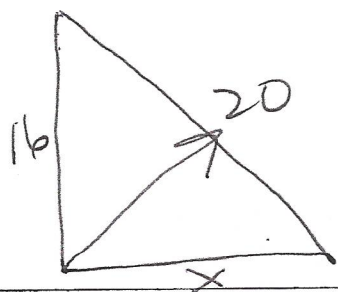
$$4^2 + 8^2 = c^2$$

$$16 + 64 = c^2$$

$$\sqrt{80} = \sqrt{c^2}$$

$$8.9 = c$$

11) To repair a roof that is 16 feet high, Johnny places a 20 foot ladder against a building. How far away from the building should he place the base of the ladder?



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

$$16^2 + x^2 = 20^2$$

$$256 + x^2 = 400$$

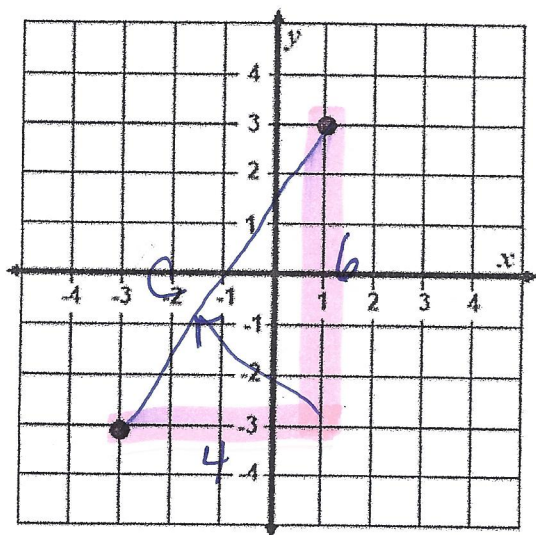
$$\begin{array}{r} 256 + x^2 = 400 \\ -256 \quad -256 \\ \hline x^2 = 144 \end{array}$$

$$x^2 = 144$$

$$x = 12$$

For problems 12 & 13, find the distance between points A and B. Round to the nearest tenth, if necessary

12)



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

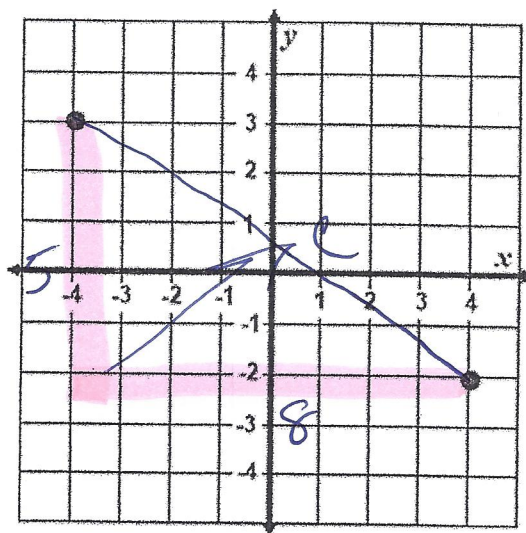
$$4^2 + 6^2 = c^2$$

$$16 + 36 = c^2$$

$$\sqrt{52} = \sqrt{c^2}$$

$$\boxed{7.2 = c}$$

13)



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

$$5^2 + 8^2 = c^2$$

$$25 + 64 = c^2$$

$$\sqrt{89} = \sqrt{c^2}$$

$$\boxed{9.4 = c}$$