Name: **KEY**

Pythagorean Theorem Extra Practice Worksheet

For 1-3, is the triangle a right triangle? Show your work.

1)
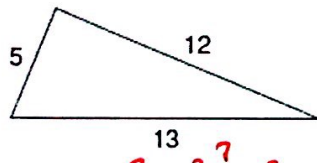

Sides: 6, 8, 9

$6^2 + 8^2 \overset{?}{=} 9^2$
$100 \neq 81$ **No**

2)

Sides: 5, 12, 13
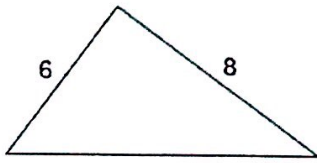
$5^2 + 12^2 \overset{?}{=} 13^2$
$169 = 169$ **Yes**

3) $a = 2.1, \ b = 7.2, \ c = 7.5$

$2.1^2 + 7.2^2 \overset{?}{=} 7.5^2$
$56.25 = 56.25$ **Yes**

For 4 – 8, find the length of the 3rd side of the triangle.

4)
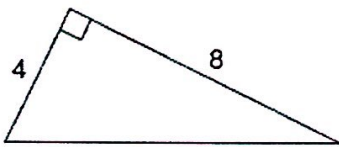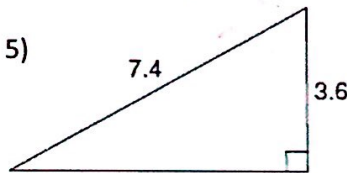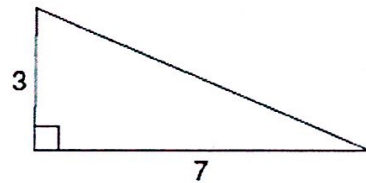
Sides: 4, 8

$4^2 + 8^2 = x^2$
$x \approx 8.9$

5)

Sides: 7.4, 3.6

$3.6^2 + x^2 = 7.4^2$
$x \approx 6.5$

6)

Sides: 3, 7

$3^2 + 7^2 = x^2$
$x \approx 7.6$

7)

Sides: 3.9, 11

$3.9^2 + x^2 = 11^2$
$x \approx 10.3$

8)

Sides: 2.7, 6.5

$x^2 + 2.7^2 = 6.5^2$
$x \approx 5.9$

9) Find x:

This triangle first →
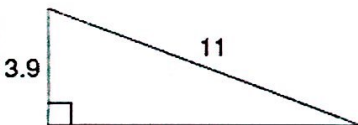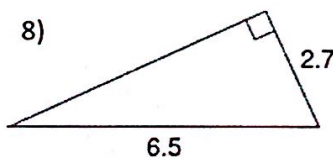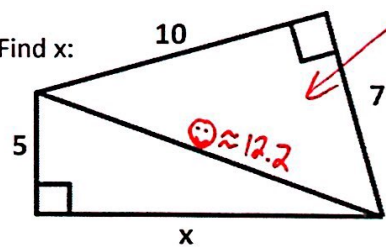
$10^2 + 7^2 = \bigodot^2$
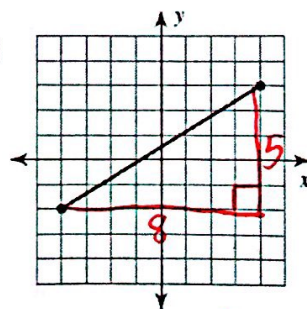$\bigodot \approx 12.2$

$5^2 + x^2 = 12.2^2$ $x \approx 11.1$

Find the distance between the two points.

10)
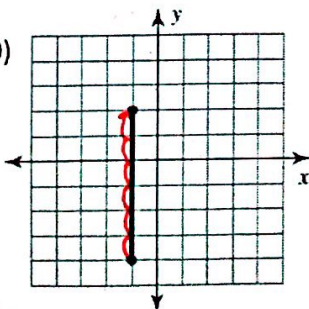
6 (Not diagonal, can just count spaces)

11)

$5^2 + 8^2 = x^2$
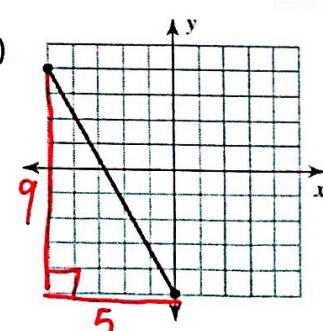$x \approx 9.4$

12)

$5^2 + 9^2 = x^2$
$x \approx 10.3$

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Find the distance between the two points. Use the graph if you wish.

13) (1, 5) and (4, 9)

$3^2 + 4^2 = x^2$

$\boxed{d = 5}$

14) (-9, 2) and (-4, -3)

$5^2 + 5^2 = x^2$

$\boxed{d \approx 7.1}$

15) (-2, -7) and (6, -8)

$1^2 + 8^2 = x^2$

$1 + 64 = x^2$

$65 = x^2$

$\boxed{x \approx 8.1}$

16) (5, 9) and (11, 1)

$8^2 + 6^2 = x^2$

$\boxed{x = 10}$

17) (0, 0) and (300, 400)

400

300

$300^2 + 400^2 = x^2$

$\boxed{x = 500}$

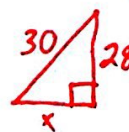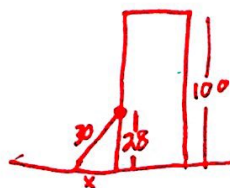18) (32, 80) and (37, 65)

15

5

$5^2 + 15^2 = x^2$

$25 + 225 = x^2$

$250 = x^2$

$\boxed{x \approx 15.8}$
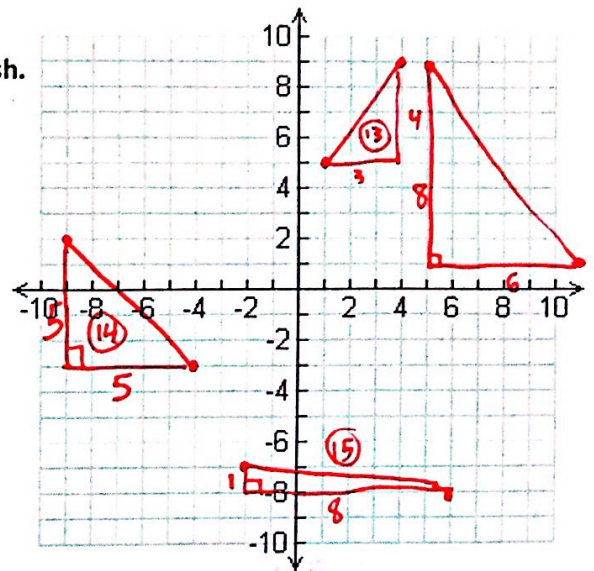
19) A skyscraper is 100 feet tall. A man wants to use a 30-foot ladder to rescue somebody that is trapped in a room whose window is 28 feet above the ground. How far away from the building should he put the bottom of the ladder?

30   28

100

$x^2 + 28^2 = 30^2$

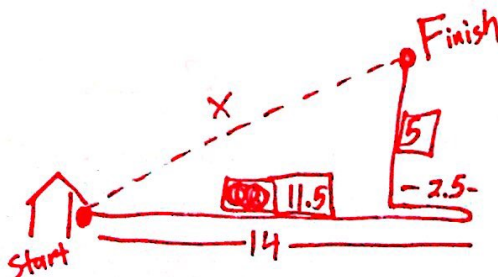$\boxed{x \approx 10.8 \text{ feet}}$

20) The same ladder is moved out so that the base is 15 feet away from the building. How high will the ladder reach now?

30   x

15
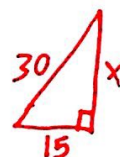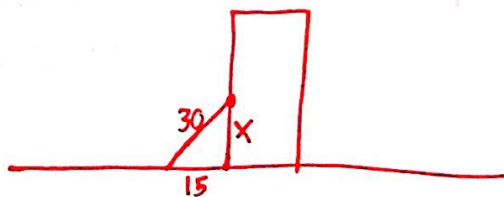
$15^2 + x^2 = 30^2$

$\boxed{x \approx 26.0 \text{ feet}}$

21) Derman left his house and drove 14 miles east. However, he realized that he missed his turn, so he turned around and drove 2.5 miles west. He then drove 5 miles north. How far away from his house did he end up?

Finish

x   5   -2.5-

11.5

Start   14

$5^2 + 11.5^2 = x^2$

$\boxed{x \approx 12.5 \text{ miles}}$