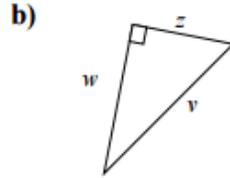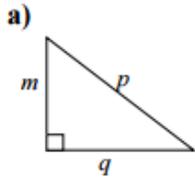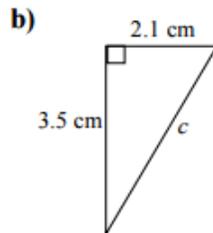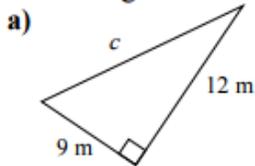# Pythagorean Theorem Applications Worksheet

Include proper units with your answers. Round to match the measures given.

1. Which side of each triangle is the hypotenuse?
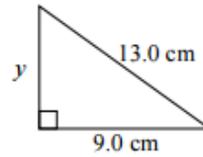
a)
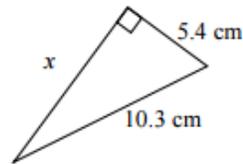
b)

2. Calculate the length of the hypotenuse of each triangle.

a)

12 m

9 m

b)

2.1 cm

3.5 cm

c

3. Calculate the length of the unknown side in each triangle.
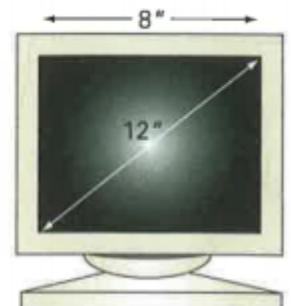
a)

13.0 cm

y

9.0 cm

b)

5.4 cm

x

10.3 cm

4. Melita takes a shortcut to school by walking across a rectangular field diagonally. The field measures 120 m by 160 m. What distance does Melita save?

5. TV and computer screens are described by the measure along their diagonal, typically in inches. What is the height of a 12" computer screen, if its width is 8" ?

8"

12"

6. A surveyor is finding the height of a vertical cliff. She measures the base of the cliff to be 100m away, and the top of the cliff to be 125m away. How high is the cliff? (start by making a sketch)

7. Scott wants to swim across a river that is 400 meters wide. He begins swimming perpendicular to the shore he started from but ends up 100 meters down river from where he started because of the current. How far did he actually swim from his starting point?

8. Determine the **perimeter and the area** of the following triangles:

a)

2.1 m

5.5 m

b)

60 cm
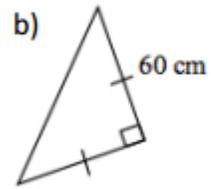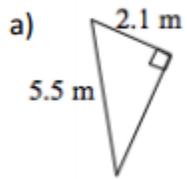
9. If a rectangle has a diagonal that measures 60 meters and one side measures 48 meters. What is the perimeter of the rectangle?

> **Remember:**
>
> *Perimeter of a rectangle* $= 2l + 2w$

10. A cardboard box measures 40 cm by 40 cm by 30 cm. Calculate the length of the diagonal space, to the nearest centimeter.

30 cm

space diagonal

40 cm

40 cm