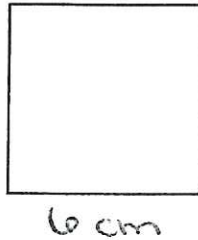


Name: Key

Warm Up \*You will be handing this paper in\*

1) The side lengths of the following square are 6 cm.



a. Find the perimeter of the square.

$$P = \text{add all sides or } P = 4 \times s$$

$$P = 6 + 6 + 6 + 6$$

$$P = 24 \text{ cm}$$

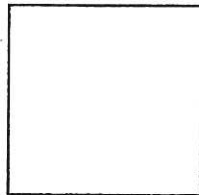
b. Find the area of the square.

$$A = s^2$$

$$A = 6^2$$

$$A = 36 \text{ cm}^2$$

2) The AREA of the following square is  $81 \text{ cm}^2$ .



a. Find the length of the sides.

$$\text{sides} = \sqrt{\text{Area}}$$

$$\text{side} = \sqrt{81}$$

$$s = 9 \text{ cm}$$

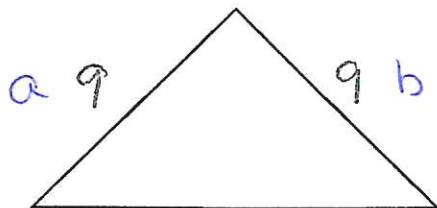
b. Find the perimeter.

$$P = s_1 + s_2 + \dots$$

$$P = 9 + 9 + 9 + 9$$

$$P = 36 \text{ cm}$$

3) Are the following triangles RIGHT triangles? (Hint, check if they follow the rule  $a^2 + b^2 = c^2$ )



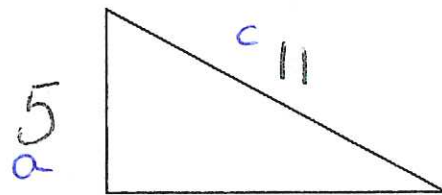
$$c = 12.728$$

$$a^2 + b^2 \stackrel{?}{=} c^2$$

$$9^2 + 9^2 \stackrel{?}{=} 12.728^2$$

$$81 + 81 \stackrel{?}{=} 162$$

$$162 = 162 \quad \text{Yes}$$



$$b = 8$$

$$a^2 + b^2 \stackrel{?}{=} c^2$$

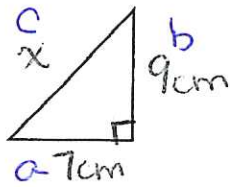
$$5^2 + 8^2 \stackrel{?}{=} 11^2$$

$$25 + 64 = 121$$

$$89 \neq 121 \quad \text{No}$$

## Practice – Pythagorean Theorem

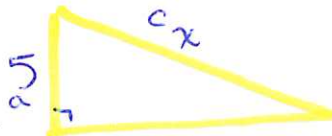
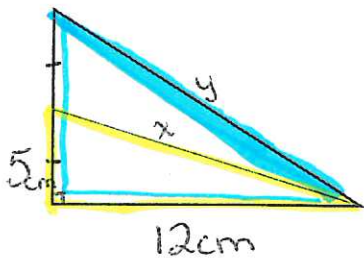
1) Find the missing side length.



$$\begin{aligned}
 a^2 + b^2 &= c^2 \\
 7^2 + 9^2 &= x^2 \\
 49 + 81 &= x^2 \\
 \sqrt{130} &= \sqrt{x^2} \\
 11.401 &= x
 \end{aligned}$$

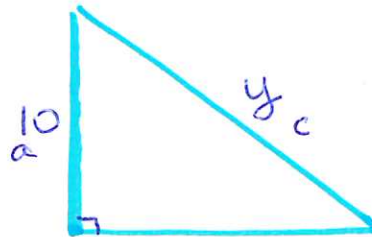
$$x = 11.401 \text{ cm}$$

2) Highlight the 2 right triangles, redraw them apart from each other, then solve for the missing lengths.



$$\begin{aligned}
 a^2 + b^2 &= c^2 \\
 5^2 + 12^2 &= x^2 \\
 25 + 144 &= x^2 \\
 \sqrt{169} &= \sqrt{x^2} \\
 13 &= x
 \end{aligned}$$

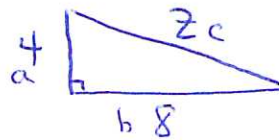
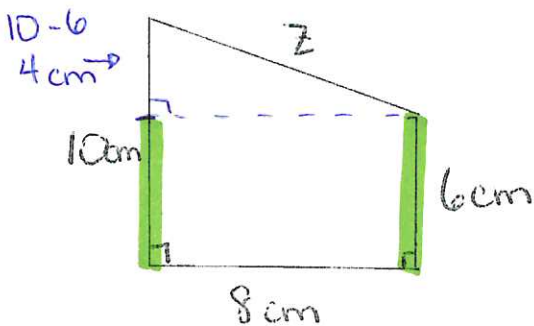
$$x = 13 \text{ cm}$$



$$\begin{aligned}
 a^2 + b^2 &= c^2 \\
 10^2 + 12^2 &= y^2 \\
 100 + 144 &= y^2 \\
 \sqrt{244} &= \sqrt{y^2} \\
 15.620 &= y
 \end{aligned}$$

$$y = 15.620 \text{ cm}$$

3) Create a 90° triangle within this diagram, then solve for the missing length.



$$\begin{aligned}
 a^2 + b^2 &= c^2 \\
 4^2 + 8^2 &= z^2 \\
 16 + 64 &= z^2 \\
 \sqrt{80} &= \sqrt{z^2} \\
 8.944 &= z
 \end{aligned}$$

$$z = 8.944 \text{ cm}$$