

Last Name: Answer Key
First Name: A. Zito

Date: _____
Grade 9
Term 2 – Practice Test 5

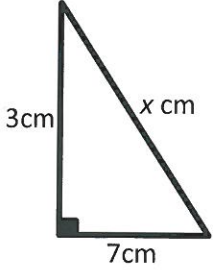
1) Convert the following.

a) $8m^2 = \underline{0.0008} \text{ hm}^2$	b) $14L = \underline{14000} \text{ cm}^3$
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$Km^3 \text{ hm}^3 \text{ dam}^3 \text{ m}^3 \text{ dm}^3 \text{ cm}^3 \text{ mm}^3$
↓
L

2) Determine the length of the missing side.

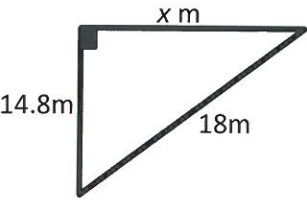
a)



$a^2 + b^2 = c^2$
 $3^2 + 7^2 = x^2$
 $9 + 49 = x^2$
 $58 = x^2$
 $\sqrt{58} = x$
 $x \approx 7.615773106$

Answer: $x = \underline{7.6 \text{ cm}}$

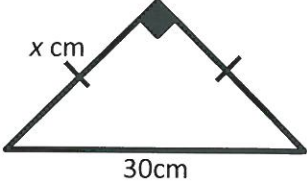
b)



$a^2 + b^2 = c^2$
 $a^2 + 14.8^2 = 18^2$
 $a^2 + 219.04 = 324$
 $a^2 = 324 - 219.04$
 $a^2 = 104.96$
 $a = \sqrt{104.96}$
 $a \approx 10.24499878$

Answer: $x = \underline{10.24 \text{ cm}}$

c)



$a^2 + b^2 = c^2$
 $x^2 + x^2 = 30^2$
 $2x^2 = 30^2$
 $\frac{2x^2}{2} = \frac{900}{2}$
 $x^2 = 450$
 $x = \sqrt{450}$
 $x \approx 21.21320344$

Answer: $x = \underline{21.21 \text{ cm}}$

- 3) Determine the slope of the line passing through the following two points. You must show all your work including the formula and the values substituted into the formula. The final answer must be simplified. No decimals.

<p>a) $A(-5, 9)$ and $B(18, -12)$ $\begin{matrix} x_1 & y_1 & & x_2 & y_2 \\ -5 & 9 & & 18 & -12 \end{matrix}$</p> $a = \frac{y_2 - y_1}{x_2 - x_1}$ $a = \frac{(-12) - (9)}{(18) - (-5)}$ $a = \frac{-12 - 9}{18 + 5}$ $a = \frac{-21}{23}$	<p>Final Answer: $a = -\frac{21}{23}$</p>
<p>b) $A(-8, 9)$ and $B(5, -6)$ $\begin{matrix} x_1 & y_1 & & x_2 & y_2 \\ -8 & 9 & & 5 & -6 \end{matrix}$</p> $a = \frac{y_2 - y_1}{x_2 - x_1}$ $a = \frac{(-6) - (9)}{(5) - (-8)}$ $a = \frac{-6 - 9}{5 + 8}$ $a = \frac{-15}{13}$	<p>Final Answer: $a = -\frac{15}{13}$</p>
<p>c) $A(-17, 4)$ and $B(13, -3)$ $\begin{matrix} x_1 & y_1 & & x_2 & y_2 \\ -17 & 4 & & 13 & -3 \end{matrix}$</p> $a = \frac{y_2 - y_1}{x_2 - x_1}$ $a = \frac{(-3) - (4)}{(13) - (-17)}$ $a = \frac{-3 - 4}{13 + 17}$ $a = \frac{-7}{30}$	<p>Final Answer: $a = \frac{-7}{30}$</p>
<p>d) $A(8, -4)$ and $B(2, 32)$ $\begin{matrix} x_1 & y_1 & & x_2 & y_2 \\ 8 & -4 & & 2 & 32 \end{matrix}$</p> $a = \frac{y_2 - y_1}{x_2 - x_1}$ $a = \frac{(32) - (-4)}{(2) - (8)}$ $a = \frac{32 + 4}{2 - 8}$ $a = \frac{36}{-6} \quad a = -6$	<p>Final Answer: $a = -6$</p>

- 4) The perimeter of the rectangle is $36a-17$ cm. The algebraic expression for the length of the rectangle is $5a-9$. What is the algebraic expression for the width of the rectangle?

$$P = 2(\text{Length}) + 2(\text{width})$$

$$36a-17 = 2(5a-9) + 2(\text{width})$$

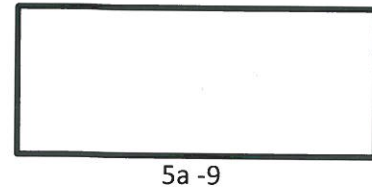
$$36a-17 = 10a-18 + 2(\text{width})$$

$$36a-17 - 10a + 18 = 2(\text{width})$$

$$\frac{26a + 1}{2} = \frac{2(\text{width})}{2}$$

$$\frac{26a}{2} + \frac{1}{2} = \text{width}$$

$$13a + \frac{1}{2} = \text{width}$$



Answer: width is $(13a + 0.5)$

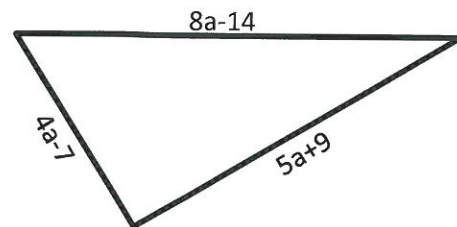
- 5) The perimeter of the triangle is 73cm. The algebraic expressions for the sides of the triangle are: $(4a-7)$, $(5a+9)$, $(8a-14)$. What is the value of each side of the triangle?

$$P = (\text{side}_1) + (\text{side}_2) + (\text{side}_3)$$

$$73 = (4a-7) + (5a+9) + (8a-14)$$

$$73 = 4a-7 + 5a+9 + 8a-14$$

$$73 = 17a-12$$



$$73 + 12 = 17a$$

$$\frac{85}{17} = \frac{17a}{17}$$

$$a = 5$$

$$4a-7$$

$$4(5)-7$$

$$20-7$$

$$13$$

$$5a+9$$

$$5(5)+9$$

$$25+9$$

$$34$$

$$8a-14$$

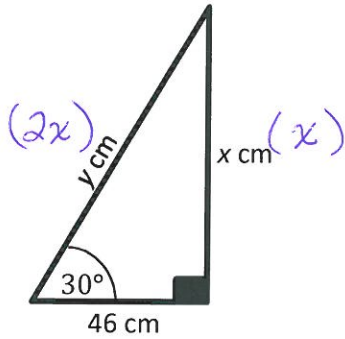
$$8(5)-14$$

$$40-14$$

$$26$$

Answer: The length of the sides of the triangle: 13, 26, 34

6) Determine the length of the missing sides



Answer: $x = \underline{26.56 \text{ cm}}$ $y = \underline{53.12 \text{ cm}}$

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

$$x^2 + 46^2 = (2x)^2$$

$$x^2 + 2116 = 4x^2$$

$$2116 = 4x^2 - x^2$$

$$\frac{2116}{3} = \frac{3x^2}{3}$$

$$x^2 = \frac{2116}{3}$$

$$x = \sqrt{\left(\frac{2116}{3}\right)}$$

$$x \approx 26.55811238$$

$$x = 26.56$$

$$y = 2(26.56)$$

$$y = 53.12$$