

Sangam .S.K.M College- Nadi

Year 11 Life Skills -Mathematics

Worksheet 1 – Solutions

1a)	Savings Goal
b)	Budget
c)	Double-time pay
d)	Overtime
e)	Fixed Expenses
f)	Variable expenses
2.	<p>Total wages = $22 \times 12.20 + 10 \times 18.3 + 6 \times 24.4$</p> <p style="text-align: center;">= <u>\$597.80</u></p> <p>Normal hours = 22 hrs</p> <p>Time and half = 10hrs</p> <p>Double time = 6 hrs</p> <p>Cross check with the questions total hours should add up to 38hours. 22 hours normal .</p>

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Solution -Week 1

Year 11

Mathematics – Life Skills

Activity

1. Round – off the following decimals to the number of decimal places indicated in the brackets.

- a. 0.5831 (2) = 0.58
- b. 638.569 (2) = 638.57
- c. 10.6386 (3) = 10.639
- d. 77.783 (1) = 77.8

2. Total Growth = $7.05 + 6.95 + 6.098 + 5.99 = 26.088$ cm

Therefore to nearest whole number its **26cm**

3. a. 70.7 has been rounded to 1 decimal place. Work out the **upper** and **lower** bounds.

$$1 \text{ decimal place} = \frac{0.1}{2} = 0.05$$

$$\text{Lower bound} = 70.7 - 0.05 = 70.65$$

$$\text{Upper bound} = 70.7 + 0.05 = 70.75$$

Therefore written in inequality form: $70.65 \leq x \leq 70.75$

- b. 65.6 has been rounded to 2 decimal place. Work out the **upper** and **lower** bounds.

$$2 \text{ decimal places} = \frac{0.01}{2} = 0.005$$

$$\text{Lower bound} = 65.6 - 0.005 = 65.595 = 65.60$$

$$\text{Upper bound} = 65.6 + 0.005 = 65.61$$

Therefore written in inequality form: $65.60 \leq x \leq 65.61$

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Year 11 Applied Mathematics

Worksheet 1 – Solutions

1i)	Yes, because no foreign element is present.
ii)	$(3 \div 4) \div 2 = 2 \div 2 =$
iii)	$3^{-1} = 2$
2i)	Total cost = deposit + installments $= (.2 \times 1200) + (12 \times 125)$ $= \underline{\$1740}.$
ii)	Extra = $1740 - 1200 = \underline{\$540}$
3	Volume of square pyramid $= \frac{1}{3} \times \text{base area} \times \text{height}$ $= \frac{1}{3} \times (5 \times 5) \times 15$ $= \underline{125 \text{ ccm}^3}$

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Solution -Week 1

Year 11

Mathematics – Applied

1. Find the midpoint of the segment connecting the points $(6, 4)$ & $(3, -4)$
 (x_1, y_1) (x_2, y_2) .

$$mp = \left(\frac{6 + 3}{2}, \frac{4 + (-4)}{2} \right) = \left(\frac{9}{2}, \frac{0}{2} \right) = (4.5, 0)$$

2. Find the midpoint of the segment connecting the points (a, b) & $(3a, c)$
 (x_1, y_1) (x_2, y_2) .

$$mp = \left(\frac{a + 3a}{2}, \frac{b + c}{2} \right) = \left(\frac{4a}{2}, \frac{b + c}{2} \right) = (2a, \frac{b + c}{2})$$

6. Find the distance between the points, $(-4, -5)$ $(1, -2)$
 (x_1, y_1) (x_2, y_2) .

$$\begin{aligned} d &= \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} = \sqrt{(1 - -4)^2 + (-2 - -5)^2} \\ &= \sqrt{(1 + 4)^2 + (-2 + 5)^2} \\ &= \sqrt{(5)^2 + (3)^2} = \sqrt{25 + 9} = \sqrt{34} = 5.83 \end{aligned}$$

7. Find the length of the line segment whose end points are $(-3, 4)$ $(5, 4)$
 (x_1, y_1) (x_2, y_2) .

$$\begin{aligned} d &= \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} = \sqrt{(5 - -3)^2 + (4 - 4)^2} \\ &= \sqrt{(5 + 3)^2 + (4 - 4)^2} \\ &= \sqrt{(8)^2 + (0)^2} = \sqrt{64} = 8 \end{aligned}$$

9. Find the equation of the line passing through the points, $(2, 4)$ $(-3, -6)$
 (x_1, y_1) (x_2, y_2) .

Step 1: Find the gradient

$$\text{Slope } m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{-6 - 4}{-3 - 2} = \frac{-10}{-5} = 2$$

Step 2: Choose one point and the gradient in the point slope formula

Let's use point $(2, 4)$

$$\begin{aligned} y - y_1 &= m(x - x_1) \text{ -----point slope formula} \\ y - 4 &= 2(x - 2) \\ y - 4 &= 2x - 4 \\ y - 4 + 4 &= 2x - 4 + 4 \\ y &= 2x \end{aligned}$$