Topic Title: Test 2 - Algebra, Earning Money & Simple/Compound Interest

Student Name: _Answers_

Date: _____

Special Instructions: **Calculator Free**

Time Allowed: 20 minutes

Formulae Sheet

Marks: / 17

Show all working

Question 1 [2, 2: 4 marks]

If $x = -2$, $y = 3$, and $z = 5$, then find the values of:

a) $5x^2$

$$= 5(-2)^2 \checkmark$$
$$= 5(4)$$
$$= 20 \checkmark$$

b) $\dfrac{x-y}{yz}$

$$= \dfrac{-2-3}{3 \times 5} \checkmark$$
$$= \dfrac{-5}{15}$$
$$= -\dfrac{1}{3} \checkmark$$

Question 2 [2 marks]

Using the formula v = u + at, calculate v given: u =11, a =0.5 and t = 25

$$V = u + at$$
$$= 11 + 0.5 \times 25 \checkmark$$
$$= 11 + 12.5$$
$$= 23.5 \checkmark$$

Question 3 [3 marks]

Give worded definitions for the following financial terms:

i) Per annum:

Annually - yearly → once a year etc. ✓

ii) Principal:

Amount invested. etc. ✓

iii) Discretionary Spending:

spending which can be adjusted ✓

Question 4 [2, 1, 2: 5 marks]

(a) Tyler's usual rate of pay is $24 per hour.
What will he be paid per hour when he is paid *time-and-a-half*?

24 × 1.5 ✓
= $36 per hour on time-and-a-half ✓

(b) Beth works 40 hours in a normal week and is paid $35.00 per hour.
How much will she in earn in one week?

40 × 35 ✓
= $1400 earned in one week ✓

(c) Fran sold 5000 tickets to a concert and earned $15 000 in commission. What was the commission on each ticket?

15000 ÷ 5000 ✓
= $3 commission on each ticket ✓

Question 5 [1 mark]

Sally showed the following calculations for an $8000 investment earning simple interest @ 2.2 % p.a. for 4 years. Determine the error(s) in Sally's mathematics calculations, making necessary corrections.

Simple Interest = $ 8000 x 2.2 x 4

$$I = \frac{8000 \times 2.2 \times 4}{100}$$ ✓

OR

$$I = 8000 \times 0.022 \times 4$$

Question 6 [2: 2 marks]

For a twelve-month work contract, would you earn more if you were paid $5000 each month or $2500 per fortnight? Explain your choice of answer.

5 000 × 12 maths $ 2500 × 26 fnights

= $ 60000 p.a   = $ 65 000

∴ The fnightly payment would earn more money ✓✓

∴ Around $2307 per f/n on a $5000 monthly pay