

Name: _____

Date: _____

Class: _____



Year 11 Essential Mathematics Unit 2
Mini Test 2.3 2018
Topic – Percentages

SCORE:

/ 25

Full working out MUST be shown to get full marks for each question.

Total Time: 30 minutes

Weighting: 1%

Equipment: To be provided by the student: Pen, pencil, ruler, scientific calculator, 1 single sided page of A4 notes

Question 1

Find:

[4 marks]

- a) The price of a \$124 speaker after the 10% GST has been added

$$124 \times 0.1 = 12.40$$
$$124 + 12.4 = \$136.40$$

- b) Sally's new smart phone cost her \$749.65 including the 10% GST. How much was the base price of her smart phone before the GST was added?

$$749.65 \div 1.1 = 681.50$$
$$681.50 \times 1.1 = \$749.65$$

Question 2

[6 marks]

- a) Janaya scored 70% on her latest mathematics test out of 60 marks. How many marks did Janaya score?

$$70 \div 100 \times 60 = 42$$

$$42 \div 60 \times 100 = 70\%$$

- b) What percentage of \$48 is \$3?

$$3 \div 48 \times 100 = 6.25\%$$

- c) A plumber's quote is \$350 before GST. What is the total amount you will have to pay, including the 10% GST?

$$350 \times 1.1 = \$385$$

- d) An item increases in value by 25% to \$175. What was the original price of the item?

$$175 \div 1.25 = 140$$

Question 3**[2 marks]**

A dress which used to cost \$300 is on sale, with 20% off.

- a) How much, in dollars, would you save?

$$0.2 \times 300 = \$60 \quad \checkmark$$

- b) How much, in dollars, would you pay for the dress?

$$300 - 60 = \$240 \quad \checkmark$$

Question 4**[4 marks]**

- a) Calculate the value of a \$20 000 car after 3 years if it depreciates at 6% per year.

$$\begin{aligned} \textcircled{1} \quad 20000 \times 0.06 &= \$1200 \quad \rightarrow 20000 - 1200 = \$18800 \quad \checkmark \\ \textcircled{2} \quad 18800 \times 0.06 &= \$1128 \quad \rightarrow 18800 - 1128 = \$17672 \\ \textcircled{3} \quad 17672 \times 0.06 &= 1060.32 \quad \rightarrow 17672 - 1060.32 = \$16611.68 \quad \checkmark \end{aligned}$$

- b) At the start of 2015, you earned \$350 per week in your job. If you first got a 4% pay rise and later got a 3% pay rise, how much do you now earn each week?

$$\begin{aligned} 350 \times 0.04 &= \$14 \quad \checkmark \\ 364 \times 0.03 &= \$10.92 \quad \checkmark \\ \$374.92 &\text{ per week. } \quad \checkmark \end{aligned}$$

Question 5**[9 marks]**

- a) If \$3000 is invested at 4% p.a. simple interest for 3 years, what is the interest earned?

$$\begin{aligned} I &= P \times R \times T \\ 3000 \times 0.04 \times 3 &= \$360 \quad \checkmark \end{aligned}$$

- b) If \$4500 is invested for two and a half years and it earns \$528.75 interest, what is the interest rate per annum?

$$\begin{aligned} \frac{I}{(P \times T)} &= R \\ \frac{528.75}{(4500 \times 2.5)} &= 0.047 \times 100 = 4.7\% \quad \checkmark \end{aligned}$$

- c) Bonnie would like to buy a car for \$9 000. She has saved up \$3000 so she will need to borrow the remainder from the bank. Simple interest is charged at 0.6% per month. Bonnie pays off her car after 7 years. How much in total does she end up paying for the car?

$$\begin{aligned} 6000 \times 0.006 \times 84 &= \$3024 \quad \checkmark \\ 6000 + 3024 &= \$9024 \quad \checkmark \\ &+ \text{Her Savings of } 3000 \quad \checkmark \end{aligned}$$

End of Test

Total Cost of Car

$$= \$12034 \quad \checkmark$$