

Financial Mathematics Topic Test

1. Which is the better buy, 200 ml of shampoo for \$6.40 or 300 ml for \$9.90? Explain why.

$$\begin{aligned} \div 2 \quad & \left. \begin{array}{l} 200 \text{ ml} = \$6.40 \\ 100 \text{ ml} = \$3.20 \end{array} \right\} \div 2 \\ & \left. \begin{array}{l} 300 \text{ ml} = \$9.60 \\ \text{OR} \\ 300 \text{ ml} = \$9.90 \end{array} \right\} \times 3 \end{aligned}$$

\therefore 200ml for \$6.40 is the better buy

2. Last financial year a company had expenses of \$250 000 and income of \$350 000. What percentage profit did the company make on its expenses?

$$\begin{aligned} \text{profit} &= \$350\,000 - \$250\,000 \\ &= \$100\,000 \end{aligned}$$

$$\begin{aligned} \text{percentage profit} &= \frac{100\,000}{250\,000} \times 100 \\ &= 40\% \end{aligned}$$

3. When he had his hours reduced in his part time job, Hank's pay went down from \$58 per week to \$45 per week.

What is the percentage decrease in his pay? (Answer to the nearest whole number.)

$$\begin{aligned} \text{decrease} &= \$58 - \$45 \\ &= \$13 \end{aligned}$$

percentage decrease

$$\begin{aligned} &= \frac{13}{58} \times 100 \\ &= 22.4\% \end{aligned}$$

Name: _____

4. A retailer has priced a printer at \$125.95 including 10% GST.

Find the price before GST was added (Answer to the nearest 5 cents)

$$\begin{aligned} \div 11 \quad & \left. \begin{array}{l} 110\% = \$125.95 \\ 10\% = \$11.45 \end{array} \right\} \div 11 \\ \times 10 \quad & \left. \begin{array}{l} 100\% = \$114.50 \end{array} \right\} \times 10 \end{aligned}$$

5. A beauty salon bought bottles of moisturiser for \$30 each and sold them at a 60% profit.

What was the selling price of a bottle of moisturiser?

$$\begin{aligned} \text{selling price} &= 160\% \times \$30 \\ &= 1.6 \times \$30 \\ &= \$48 \end{aligned}$$

6. An auto-parts store sells touch-up paint for \$8.00 before GST. What is the price when 10% GST is included?

$$\begin{aligned} \text{price with GST} &= 110\% \times \$8 \\ &= 1.1 \times \$8 \\ &= \$8.80 \end{aligned}$$

7. The price of a model car is \$132 including GST. What was the price before adding GST?

$$\begin{aligned} \div 11 \left\{ \begin{array}{l} 110\% = \$132 \\ 10\% = \$12 \\ 100\% = \$120 \end{array} \right. \end{aligned}$$

price before GST = \$120

10. A retailer has priced a printer at \$125.95 including 10% GST.

Find the GST

$$\div 11 \left\{ \begin{array}{l} 110\% = \$125.95 \\ 10\% = \$11.45 \end{array} \right.$$

GST = \$11.45

8. Sophie buys a TV for \$500 and sells it later for \$320. What is her loss as a percentage of the selling price?

$$\begin{aligned} \text{loss} &= \$500 - \$320 \\ &= \$180 \end{aligned}$$

$$\begin{aligned} \text{Percentage loss} &= \frac{\$180}{320} \times 100 \\ &= 56.25\% \end{aligned}$$

9. Natasha is saving 62.5% of ^{or} his weekly pocket money to buy a bike.

If her weekly pocket money totals \$36.00, how much does she save?

$$\begin{aligned} \text{saving} &= 62.5\% \times \$36 \\ &= \frac{62.5}{100} \times \$36 \\ &= \$22.50 \end{aligned}$$

11.

There are four ways that you can buy Loner brand soft drink in a supermarket.

Which is the best value for money? (Explain how you determined your answer.)

A pack of six 300 ml cans for \$7.20.

Individual 375 ml cans for \$2.80 each.

Individual 1.25 litre bottles for \$4.80 each.

Individual 2 litre bottles for \$7.80

① 6 x 300 ml cans = \$7.20

$$\div 18 \left\{ \begin{array}{l} 1800 \text{ ml} = \$7.20 \\ 100 \text{ ml} = \$0.40 \end{array} \right.$$

② $\left. \begin{array}{l} 375 \text{ ml} = \$2.80 \\ 25 \text{ ml} = \$0.19 \end{array} \right\} \div 15$
 $\times 4 \left\{ \begin{array}{l} 100 \text{ ml} = \$0.75 \end{array} \right.$

③ 1.25 L = \$4.80 ← cheapest

$$\div 25 \left\{ \begin{array}{l} 1250 \text{ ml} = \$4.80 \\ 50 \text{ ml} = \$0.192 \\ 100 \text{ ml} = \$0.384 \end{array} \right.$$

④ 2 L = \$7.80
 $\div 20 \left\{ \begin{array}{l} 2000 \text{ ml} = \$7.80 \\ 100 \text{ ml} = \$0.39 \end{array} \right.$