



Name: _____

Mathematics Essential

Test 8, 2015

Topics – Percentage

$\frac{\quad}{54}$
$= \frac{\quad}{\quad} \%$

Total Time: **60 minutes**
Total Reading: **5 minutes**
Total Working: **55 minutes**
Weighting: **4% of the year.**
Equipment Allowed: **Calculator, 1 page of A4 notes.**

You must include all working out to receive full marks

CALCULATOR ASSUMED

1. (4 marks: 1, 1, 1, 1)

Find:

a) 10% of \$540

\$54 ✓

b) 12% of 490 books

58.8 \approx 59 book ✓

c) 55% of 15 kg

8.25 kg ✓

d) 0.15% of \$690

\$1.035
 \approx \$1.04 ✓

2. (3 marks: 1, 1, 1)

The formula for Simple Interest is $SI = P \times r \times t$

a) What does the P stand for?

Principal ✓

b) What does the r stand for?

interest rate ✓

c) What does the t stand for?

time ✓

3. (6 marks: 2, 2, 2)

Complete the table below:

Decimal	Fraction	Percent
0.25	$\frac{1}{4}$ ✓	25% ✓
0.2 ✓	$\frac{2}{10}$	20% ✓
0.35 ✓	$\frac{7}{20}$ ✓	35%

4. (2 marks: 1, 1)

Express the following as a percentage:

a) 15 out of 20

$$75\% \checkmark$$

b) 16 metres out of 400 metres

$$4\% \checkmark$$

5. (8 marks: 2, 2, 2, 2)

a) There are 940 students at Peel Senior High School. 55% of these students are girls. How many boys attend Peel Senior High School?

$$100 - 55 = 45$$

$$\frac{940}{100} \times 45 = 263.29 \checkmark$$

263 boys ✓

b) The local clothing shop offers 15% off all shirts. What would you pay for a shirt that normally costs \$32?

$$32 \times 0.85 = \$27.20 \checkmark$$

c) Sue pays \$440 a week in rent. The landlord decides to increase the rent by 3%. How much does Sue now pay each week?

$$440 \times 1.03 = \$453.20 \checkmark$$

d) 92% of the 1200 students at Peel Senior High School have mobile phones. How many students have mobile phones?

$$\frac{1200}{100} \times 92 = 1104 \text{ students} \checkmark$$

6. (5 marks: 4, 1)

Tim had the following test results.

Mathematics 64 out of 70

Science 34 out of 40

English 79 out of 82

HASS 53 out of 65

a) Calculate each test result as a percentage.

$$\text{Maths } \frac{64}{70} \times 100 = 91.4\% \checkmark$$

$$\text{English } 96.3\% \checkmark$$

$$\text{Science } 85\% \checkmark$$

$$\text{HASS } 81.5\% \checkmark$$

b) Order the subjects from lowest to highest percentage.

HASS Science Maths English \checkmark

7. (4 marks: 2, 2)

Jason invests \$2500 with the Commonwealth bank at simple interest of 6% p.a. Find the interest if he invests his money for:

a) 3 years

$$2500 \times 3 \times 0.06 \checkmark$$
$$= \$450 \checkmark$$

b) 10 years

$$2500 \times 10 \times 0.06 \checkmark$$
$$= \$1500 \checkmark$$

8. (6 marks: 2, 2, 2)

Jane borrowed \$22,000 for 4 years from a vehicle finance company when she purchased her car. The interest rate was a flat 8.7% p.a.

a) How much interest will Jane pay over the length of the loan?

$$\$22000 \times 4 \times 0.087 \checkmark$$
$$= \$7656 \checkmark$$

b) How much will Jane end up paying for her new car?

$$\$22000 + 7656 \checkmark$$
$$= \$29656 \checkmark$$

c) Jane needs to make monthly payments on the car. How much will she need to pay each month in order to have the loan paid off in the 4 years?

$$29656 \div 48 \checkmark$$
$$= \$617.83$$

9. (7 marks: 3, 2, 2)

The local appliance store is having an end of season sale, offering 30% off normal prices and a further 15% discount for cash payments.

- a) John plans on paying cash for a new washing machine that is normally priced at \$945. How much will he pay during the sale?

$$\begin{aligned} \$945 \times 0.7 &= \$661.50 \checkmark \\ \$661.50 \times 0.85 &= \$562.28 \checkmark \end{aligned}$$

- b) How much in total will John save?

$$945 - 562.28 = \$382.72 \checkmark$$

- c) What single percentage would give the same discount on the washing machine?

$$\frac{382.72}{945} \times 100 = 40.49\% \checkmark$$

10. (6 marks: 2, 3, 1)

Mat is a salesperson at a sports store. He earns \$22.50 per hour for an eight hour day. Lucy works at the same store but earns \$20.20 per hour and receives a commission of 1.8% of the total value of goods that she sells.

Last Friday Lucy sold \$2950 worth of goods.

- a) How much did Mat earn on Friday?

$$\$22.50 \times 8 = \$180 \checkmark$$

- b) How much did Lucy earn on Friday?

$$\$20.20 \times 8 = 161.60 \checkmark$$

$$\frac{2950}{100} \times 1.8 = \$53.10 \checkmark$$

Total \$214.70

- c) What was the difference in the amount of money earned?

$$\$214.70 - 180 = \$34.70 \checkmark$$

10. (3 marks: 1, 2)

A doctor charges James \$68.00 for a routine visit. The Medicare rebate on this charge is \$35.80.

- a) How much of the \$68.00 will not be covered by Medicare?

$$68 - 35.80 = \$32.20 \checkmark$$

- b) What percentage of the cost is this?

$$\frac{32.20}{68} \times 100 = 47.35\% \checkmark$$