



# Mathematics Essentials 2015

## Test 1

Task Weighting: 10%

*SOLUTIONS*

Student Name: \_\_\_\_\_

Time Allowed: 50 Minutes

Total Marks: 49

Calculators and files are allowed in this test.

Answer all of the following questions. Show all working to maximise marks.

Question 1 [6 Marks: 1, 1, 1, 1, 1, 2]

(a)  $30 \div 5 \times 2$   
 $= 12 \checkmark$

(b)  $4 \times (5 + (56 \div 8))$   
 $= 48 \checkmark$

(c) 15% of \$800  
 $= \$120 \checkmark$

(d)  $\frac{3}{5}$  of \$90  
 $= \$54 \checkmark$

(e) Insert brackets to make this statement true :  
 $(4 + 2 \times 3)^2 - 6 \div 2 = 97$   $\checkmark \checkmark \checkmark$

Question 2 [2 Marks]

Sam bought a new pair of shoes in a '35% off' sale. Normally the shoes cost \$90. How much did Sam pay for the shoes in the sale?

$0.65 \times 90$  or  $0.35 \times 90 = 31.50$   
 $= \$58.50 \checkmark \checkmark$   
 $90 - 31.50 = 58.50$

Question 3 [2 Marks]

Rhett has \$45 000 saved. He is going to use two thirds of his savings as a deposit on a house. How much is his deposit?

$\$45000 \div 3 = 15000 \checkmark$   
 $15000 \times 2 = \$30000 \checkmark$

Question 4 [5 Marks: 1, 1, 1, 1, 1]

Round each number to the given accuracy:

(a) 346 (nearest 10)  
 $= 350 \checkmark$

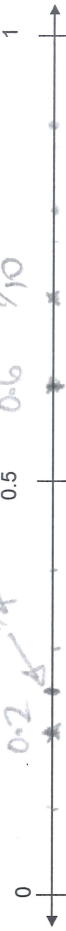
(b) 27.48 (one decimal place)  
 $27.5 \checkmark$

(c) 1001.98 (one decimal place)  
 $1002.0 \checkmark$

(d) \$72.634 (nearest cent)  
 $\$72.63 \checkmark$

(e) \$72.634 (nearest 5c)  
 $\$72.65 \checkmark$

Question 5 [4 Marks: 1, 1, 1, 1]



Place the following decimal, percentage and fractions on the number line above:

(a) 0.2

(b)  $\frac{1}{4}$

(c) 60%

(d)  $\frac{7}{10}$

Question 6 [2 Marks]

Calculate the 2.5% commission earned by a real estate agent on the sale of property worth \$325 000.

$0.025 \times 325000 = \$8125 \checkmark$

Question 7 [3 Marks: 1, 2]

Gavin sells Tupperware and earns 8% of the total sales. One week he had three parties, one valued at \$1500, one valued at \$2200 and one at \$940.

(a) What was the total value of sales for the week?

$\$4640$

(b) What commission did he earn?

$4640 \times 0.08 = \$371.20 \checkmark$

Question 8 [2 Marks: 1, 1]

Write each set of numbers in order from smallest to largest.

(a) 53.7, 53.8, 53.81, 53.75

53.7, 53.75, 53.8, 53.81 ✓

(b) 7.29, 7.3, 7.289, 7.298

7.289, 7.29, 7.298, 7.3 ✓

Question 9 [4 Marks: 1, 1, 1, 1]

(a) Express  $\frac{3}{4}$  as a decimal.

0.75 ✓

(b) Express 65% as a decimal.

0.65 ✓

(c) Change  $\frac{1}{5}$  to a percentage.

0.2 ✓

(d) Express 0.25 as a fraction.

$\frac{1}{4}$  ✓

Question 10 [4 Marks: 1, 1, 1, 1]

In each pair, circle the amount that has the greater value.

(a) 0.7 or 80% (80%)

(b)  $\frac{2}{3}$  or 75% (75%)

(c)  $\frac{3}{7}$  or  $\frac{1}{7}$  ( $\frac{3}{7}$ )

(d)  $\frac{4}{5}$  or  $\frac{5}{4}$  ( $\frac{5}{4}$ )

Question 11 [4 Marks: 2, 2]

John has just commenced his first job ever at J-Mart earning \$725 per week with 9% superannuation.

(a) Calculate his superannuation for the week.

$0.09 \times 725 = \$65.25$

(b) How many weeks will it take his superannuation to grow to \$1000?

$1000 \div 65.25 = 15.3$  ✓  
 $\therefore 16 \text{ weeks}$  ✓

Question 12 [5 Marks: 3, 2]

Three online stores are selling iPad Airs for the following prices:

RICK SMYTH'S
iPad Air
\$621

HARDLY NORMAL
iPad Air
\$709
12% OFF

RETRO VISUAL
iPad Air
\$693
$\frac{1}{6}$ OFF

(a) Which store offers the best deal and by how much? Show working to support your answer.

RS  $\rightarrow 621$   
 HN  $\rightarrow 0.88 \times 709 = 623.92$  ✓  
 RV  $\rightarrow 693 \div 6 \times 5 = 577.50$  ✓  
 $\therefore$  Retro Visual by \$43.50 ✓

(b) Each store has postage charges as follows:

Rick Smyth's - \$28      Hardly Normal - \$19.95      Retro Visual - \$15

Does this affect which store you choose? Explain with calculations.

RS  $\rightarrow 621 + 28 = \$649$  ✓  
 HN  $\rightarrow 623.92 + 19.95 = \$643.87$   
 RV  $\rightarrow 577.50 + 15 = \$592.50$

No, Retro Visual still cheapest ✓

Question 13 [3 marks]

In an Olympic diving competition, the highest and lowest scores are removed and the sum of the remaining 5 scores is multiplied by the diver's degree of difficulty. Then the result is multiplied by 0.6. The judges held up these cards for a dive with 3.2 degree of difficulty.

Calculate the final score for the dive.

<del>7.3</del>	<del>7.0</del>	7.7	7.4	<del>7.8</del>	7.7	7.5
----------------	----------------	-----	-----	----------------	-----	-----

$37.6 \checkmark \times 3.2 = 120.32 \checkmark$   
 $120.32 \times 0.6 = 72.192 \checkmark$

Question 14 [3 marks: 1, 2]

Adrian asked 30 friends about their favourite barbecue food. The table below shows the results.

- (a) For what fraction of the friends is seafood their favourite?

$\frac{6}{30} \text{ or } \frac{1}{5} \checkmark$   
(Accept)

- (b) What percentage of the group prefers sausages?

$\frac{16}{30} \times 100 = 53.3\%$

Food	Number who chose it as their favourite
Sausages	16
Steak	8
Seafood	6