High School
Mathematics Test 2013

Year 7

Percentages and Financial Maths

Skills and Knowledge Assessed:

- Connect fractions, decimals and percentages and carry out simple conversions (ACMNA157)
- Find percentages of quantities and express one quantity as a percentage of another, with and without digital technologies (ACMNA158)
- Solve problems involving the use of percentages, including percentage increases and decreases, with and without digital technologies (ACMNA187)
- Investigate and calculate Goods and Services Tax (GST), with and without digital technologies
- Investigate and calculate 'best buys', with and without digital technologies (ACMNA174)
- Solve problems involving profit and loss, with and without digital technologies (ACMNA189)

Name_____

Answer all questions in the spaces provided on this test paper by:

Writing the answer in the box provided.

or

Shading in the bubble for the correct answer from the four choices provided.

Show any working out on the test paper.

1. Which fraction is the same as 48%?

   ☐ $\frac{6}{25}$　　　☐ $\frac{2}{5}$　　　☐ $\frac{11}{25}$　　　☐ $\frac{12}{25}$

2. Write the fraction $\frac{17}{20}$ as a percentage.

3. Which of the following is **not** the same as 90%?

   ☐ $\frac{9}{10}$　　　☐ 0.9　　　☐ $\frac{18}{25}$　　　☐ $\frac{45}{50}$

4. Write 0.0125 as a percentage.

5. Which number is the largest?

   ☐ 11.5%　　　☐ $12\frac{1}{2}\%$　　　☐ 0.118　　　☐ $\frac{3}{25}$

6.   Mitchell collects some shells at the beach. They
      are all either brown or black or white. He finds
      that 16% are brown and 32% are white. What
      percentage of the shells are black?

      ☐ 48%   ☐ 52%

      ☐ 68%   ☐ 86%

7.   Calculate 24% of 400 kg.

                                                      ☐ kg

8.   Layla is asked to calculate 35% of $160.
      Which is the correct result?

      ☐ $28   ☐ $56   ☐ $70   ☐ $112

9.   A truck has a mass of 7.5 tonnes and 32% of this mass is its engine.
      What is the mass of the engine?

                                                      ☐ tonnes

10.   Walter makes 24 wooden toys for the fete, but he sells 6 of them before the fete.
      What percentage of the toys did he sell before the fete?

                                                      ☐ %

11.   Andrea is cycling each day to improve her fitness and today she cycled 32 km.

      Tomorrow she intends to cycle 36 km.

      What percentage of today's distance is this increase?

      ☐   4%   ☐ 8%   ☐ 10%   ☐ 12.5%

12.   Increase 350 kg by 20%

                                                      ☐ kg

13.   A school has a decrease of 16% in its enrolments from 2012 to 2013.
      If its enrolments in 2012 were 850, what are its enrolments in 2013?

                                                      ☐ students

14.   Colin collects DVD movies, and in the last 12 months his collection has increased from 125 DVDs to 150 DVDs.
       What is the percentage increase in his collection in the last 12 months?

         ☐   12.5%   ☐   15%   ☐   20%   ☐   25%

15.   A shoe retailer calculates that he needs to sell a particular sandal for a price of $23.00 before adding the 10% GST. What is the price after the GST is added?

         ☐ $23.10   ☐ $24.00   ☐ $25.10   ☐ $25.30

16.   Some charities can buy goods free of GST. A DVD player is advertised as costing $77.55 including the 10% GST. What price would a charity be able to buy the DVD player for?

                                                                              $ [   ]

17.   Ahn and his family make shirts for $12.50 each and sell them for $20.00.
       What is their profit as a percentage of the cost price?

                                                                      [   ] %

18.   There are three deals available on the same T shirts at four different shops.
       Which is the best value for money if you wanted three T shirts?

         ☐   Store A: Regular price of $12.00.
         ☐   Store B: 10% off the regular price of $13.00.
         ☐   Store C: A third T shirt free when you buy two at $17.00 each.
         ☐   Store D: A third T shirt at half price when you buy two at $14.00 each.

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Name_____

Answer all questions in the spaces provided on this test paper by:
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      or
   Shading in the bubble for the correct answer from the four choices provided.
Show any working out on the test paper.
Calculators are allowed for this section.

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1. 37.5% = ?

    ☐ $\frac{3}{8}$ ☐ $\frac{5}{12}$ ☐ $\frac{11}{24}$ ☐ $\frac{12}{25}$
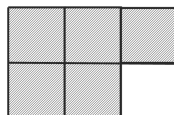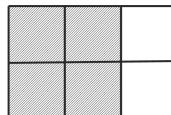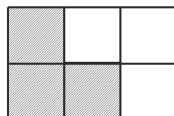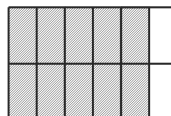
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2. Zena reads that $\frac{7}{8}$ of the population are right handed. What percentage does this represent?

    [   ] %
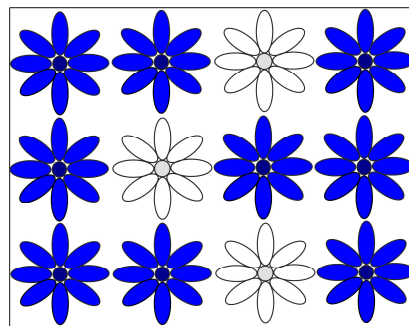
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3. Write the following in order from smallest to largest.

    $\frac{2}{3}$, 65%, $\frac{3}{5}$ and $\frac{16}{25}$.   [   ] [   ] [   ] [   ]

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4. Which diagram has $66\frac{2}{3}$% shaded?
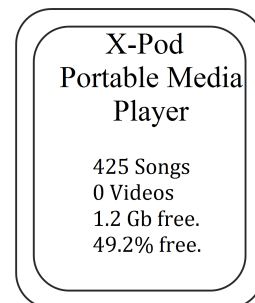
    ☐
    ☐

    ☐
    ☐

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5. When recording music onto an MP3 player Karen receives a message that 42.6% of the available space is used. What percentage remains to be used?

    [   ]

6. In the art work shown, there are some flowers with white petals and some flowers with coloured petals.
What percentage of the flowers in the art work have white petals?

7. Quentin transfers some songs onto his portable media player. After he has finished he sees the message shown. What percentage of the storage on the player has he used?

☐ 1.2%   ☐ 49.2%

☐ 50.8%   ☐ 51.8%

X-Pod
Portable Media
Player

425 Songs
0 Videos
1.2 Gb free.
49.2% free.

8. What is 26.5% of $ 2 500.00?

$ ☐ .

9. Rakshah gives $37\frac{1}{2}$ % of her pocket money to charity.
If her pocket money totals $33.60, how much does she give to charity?

☐ $4.20   ☐ $11.20   ☐ $12.60   ☐ $21.00

10. 28.5 % of the grain harvested in the Hartleford district is used for feeding stock.

There were 460 million tonnes of grain harvested in the Hartleford district last year.

How many tonnes were used for purposes other than feeding stock?

☐ tonnes

11. Stevie is a forward in hockey. She scores 32 goals from 480 shots that she has over a season.

What percentage of her shots were goals?

☐ $6.\dot{6}$ %   ☐ $16.\dot{6}$%   ☐ $48.\dot{6}$ ☐ $64.\dot{6}$%

12. A computer has 24.27 Gb of its hard drive used.
The hard drive has a capacity of 64.72 Gb.
What percentage of the hard drive is used?

☐ %

13.   Decrease $1 480.00 by 32%.

$ [   ]

14.   A newspaper reports that during the GFC the economy of a country decreased from $1 780.0 billion to $1370.6 billion.

What is the percentage decrease in the economy of the country?

☐ 23%   ☐ 25%   ☐ 33%   ☐ 77%

15.   Find the price after 10% GST has been added on a book which the retailer has priced at $12.66 without GST. (Answer to the nearest 5 cents)

$ [   ]

16.   Howard bought a bike for $480 and sold it later for $351. What was his loss as a percentage of his cost price? (Answer to the nearest tenth of a percent.)

[   ] %

17.   There are four ways that you can buy Mazziff brand soft drink in a supermarket.
Which is the best value for money?

☐ A case of twenty-four 375ml cans for $16.20.

☐ Individual 375 ml cans for $1.00 each.

☐ Individual 1.25 litre bottles for $2.40 each.

☐ Individual 2 litre bottles for $3.70.

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**Calculator Allowed
Connected Answer
Section**

Name_____

Write all working and answers in the spaces provided on this test paper.

Marks

1.   Oscar's father has an aluminium boat in which they sometimes go out fishing on the lake together.

The boat is advertised to hold a mass of 250 kg, but Oscar's father never fills it to more than 72% of this mass. He calls this his *safety net mass*.

Oscar's mass is 48 kg and his father's mass is 105 kg.

   (a)   What is the safety net mass?   **1**

…………………………………………………………………………………..

…………………………………………………………………………………..

   (b) What mass of tackle, bait, fish etc could they fit in the boat when they go   **1**
          out together if they limit themselves to the safety net mass?

…………………………………………………………………………………..

…………………………………………………………………………………..

   (c) What percentage of the safety net mass is taken up by Oscar and his father?   **1**

…………………………………………………………………………………..

…………………………………………………………………………………..

2.   Hayden sets up a business in which he makes quality model cars.
            Each car costs him $24.00 in materials and $16.00 in labour to produce.

    (a) What percentage of his costs are made up of labour?   **1**

    …………………………………………………………………………………..

    …………………………………………………………………………………..

    (b) He wants to make a 30% profit on top of his costs.   **1**
        What price should he put on the models before GST?

    …………………………………………………………………………………..

    …………………………………………………………………………………..

    (c) When he sells the models he needs to add 10% GST. What is the final   **1**
        selling price of the models?

    …………………………………………………………………………………..

    …………………………………………………………………………………..

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ANSWERS

	Non Calculator Section		
1.	$\dfrac{12}{25}$	9.	2.4 tonnes
		10.	25%
2.	85%	11.	12.5%
3.	$\dfrac{18}{25}$	12.	420 kg
		13.	714 students
4.	1.25% or $1\frac{1}{4}$%	14.	20%
5.	$12\frac{1}{2}$%	15.	$25.30
		16.	$70.50
6.	52%	17.	60%
7.	96 kg	18.	Store C
8.	$56		

	Calculator Allowed Section		
1.	$\dfrac{3}{8}$	9.	$12.60
		10.	328.9 million tonnes
2.	87.5% or $87\frac{1}{2}$%	11.	$6.\dot{6}$ %
3.	$\dfrac{3}{5}$, $\dfrac{16}{25}$, 65% , $\dfrac{2}{3}$	12.	37.5%
		13.	$1 006.40
4.	The second diagram on the top line.	14.	23%
		15.	$13.95
5.	57.4%	16.	26.9%
6.	25 %	17.	The case of twenty-four 375ml cans for $16.20
7.	50.8%		
8.	$662.50		

	Calculator Allowed Longer Answer Section	
1.	(a) 72% of 250 kg = 180	1
	(b) Their mass = 105 + 48 = 153 kg This leaves 180 – 153 = 27 kg for the other stuff.	1
	(c) Percentage = 153 ÷ 180 × 100 = 85%	1
2.	(a) Percentage = $\dfrac{16}{16 + 24} \times 100 = \dfrac{16}{40} \times 100 = 40\%$	1
	(b) Profit = 30% of $40 = 0.3 × 40 = $12 Selling price = 40 + 12 = $52	1
	(c) Price after GST = 110% of 52 = 1.1 × 52 = $57.20	1