# High School Mathematics Test 2014

## Percentages and Financial Maths

Year 8

Non Calculator Section

- 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_____

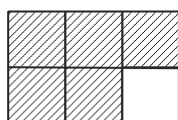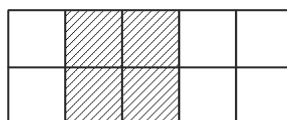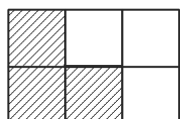*Answer all questions in the spaces provided on this test paper by:*
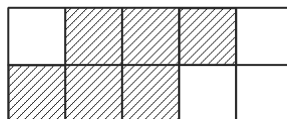
    *Writing the answer in the box provided.*

      *or*

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

*Show any working out on the test paper.  Calculators are **not** allowed.*

| | |
|---|---|
| 1. | Which diagram has  60% shaded? |
| 2. | Write 40% as a fraction in simplest form. |
| 3. | Write 46% as a decimal number. |
| 4. | Convert the fraction $\frac{9}{20}$ to a percentage.  $\boxed{\phantom{000}}$ % |

| 5. | What is 35% of 600? |
|---|---|

☐ 70       ☐ 140       ☐ 210       ☐ 280

| 6. | A loaded car has a mass of 1600 kg. Its load makes up 30% of this mass. What is the mass of the load? |
|---|---|

| 7. | Martin is asked to calculate 75% of $240. Which is the correct result? |
|---|---|

☐   $60       ☐   $120       ☐   $150       ☐   $180

| 8. | Ronnie gets 36 correct answers out of 40 on a competency test. What percentage of the answers did she get correct? |
|---|---|

| 9. | Which fraction is equivalent to 64%? |
|---|---|

☐   $\dfrac{8}{25}$       ☐   $\dfrac{16}{25}$       ☐   $\dfrac{18}{25}$       ☐   $\dfrac{20}{25}$

| 10. | What percentage is the same as 0.875? |
|---|---|

| 11. | Matthew only owns T shirts in three colours; red, black and yellow. He counts his T shirts and finds that 40% are black and 15% are yellow. What percentage of the T shirts are red? |
|---|---|

☐ 15%       ☐ 35%

☐ 45%       ☐ 55%

| 12. | In January this year Marcus had 800 pieces of Lego. After his birthday in May, he now has 1000 pieces of Lego. What is the percentage increase since January? |
|---|---|

| 13. | 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? |
|---|---|

☐ $18          ☐ $48          ☐ $60          ☐ $90

| 14. | An auto-parts store sells touch-up paint for $8.00 before GST. What is the price when 10% GST is included? |
|---|---|

| 15. | The price of a model car is $132 including GST. What was the price before adding the GST? |
|---|---|

☐ $100          ☐ $120          ☐ $130          ☐ $150

| 16. | Cedric buys a TV for $500 and sells it later for $320. What was his loss as a percentage of the cost price? |
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| 17. | Which is the better buy, 200 ml of shampoo for $6.40 or 300 ml for $9.90? Explain why. |
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| 18. | In a delivery of bananas to a grocery store, 5% are found to be spoiled. If 15 were spoiled, how many were good? |
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# High School
# Mathematics Test 2014

| Year 8 | *Percentages and Financial Maths* | Calculator Allowed Short Answer Section |
|---|---|---|

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.  Calculators are allowed.*

| 1. | $\frac{4}{5} = ?$ <br><br> ☐ 45%　　　☐ 60%　　　☐ 80%　　　☐ 90% |
|---|---|
| 2. | Jodie finds that $\frac{7}{20}$ of her class like playing Minecraft. What percentage does this represent? <br><br> ⬚ % |
| 3. | What is 5.5% when written as a decimal? 　　⬚ |
| 4. | Sylvie has a library of books in her home. <br> There are 120 non-fiction books and 480 fiction books. <br> What percentage of the library is fiction? <br><br> ⬚ |
| 5. | Mason 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? <br><br> ☐ 14%　　　☐ 24% <br> ☐ 64%　　　☐ 74% <br><br> Sumyong Portable Media Player <br><br> 425 Songs <br> 0 Videos <br> 1.62 Gb free. <br> 36% free. |

| | |
|---|---|
| 6. | What is 35.5% of $ 6 400?<br><br>$ [   **.**  ] |
| 7. | $\dfrac{7}{8} = ?$<br><br>☐ 78%   ☐ 87.5%   ☐ 92.5%   ☐ 95% |
| 8. | Keelan is saving 62.5 % of his weekly pocket money to buy a bike.<br>If his weekly pocket money totals $36.00, how much does he save?<br><br>☐ $22.50   ☐ $25.00   ☐ $27.00   ☐ $30.50 |
| 9. | Keith is the goal kicker for the Tigers Rugby League team. He had 85 shots at goal last season and was successful with 74 of them.<br><br>What percentage of his shots were successful (to the nearest whole number)?<br><br>☐ 13%   ☐ 63%   ☐ 74%   ☐ 87% |
| 10. | Last financial year a company had expenses of $ 250 000 and income of $350 000.<br>What percentage profit did the company make on its expenses?<br><br>[    ] % |
| 11. | Decrease $2 480.00 by 18%.<br><br>$ [    ] |
| 12. | When he had his hours reduced in his part time job, Hank's pay went down from $58 per week to $45 per week.<br><br>What is the percentage decrease in his pay? (Answer to the nearest whole number.)<br><br>☐ 13%   ☐ 22%   ☐ 33%   ☐ 77% |
| 13. | A retailer has priced a printer at $125.95 including 10% GST.<br>Find the price before GST was added (Answer to the nearest 5 cents)<br><br>$ [    ] |

| | |
|---|---|
| 14. | Tegan was shopping for a new school bag and saw that the bag she wanted, which was normally priced at $36.00, was discounted by 20%. She had her mother's frequent customer card which entitled her to a further 5% discount. What did she pay for the bag? (Answer to the nearest 5 cents.)<br><br>$ ⬜ |
| 15. | Write the following in order from smallest to largest.<br><br>$\dfrac{5}{8}$,   64% ,   0.63   and $\dfrac{15}{25}$.<br><br>⬜ ⬜ ⬜ ⬜ |

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| Year 8 | *Percentages and Financial Maths* | Calculator Allowed Connected Answer Section |
|---|---|---|

Name_____

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

**Marks**

1. 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.)     **3**

   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.

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2. Hugh is about to copy data from his computers C drive onto an external hard drive, The C drive has 85% of its available space used and the external drive has 24% of its space used.

   (a)  The C drive has a capacity of 820 GB. How many GB of data does it currently store?     **1**

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   (b)  The external drive has a total capacity of 4 100 GB. How many GB of data can be added to it before it is full?     **1**

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   (c)  What percentage of the external drive will still be free after Hugh has backed up all of his C drive?     **1**

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# Mathematics Test 2014
## Percentages and Financial Maths
## ANSWERS

### Non Calculator Section ( 1 mark each)

| Q no | | Answer |
|---|---|---|
| 1. | 6 out of 10 is 60%, the last diagram | (4th Answer) |
| 2. | $405 = \dfrac{40}{100} = \dfrac{4}{10} = \dfrac{2}{5}$ | |
| 3. | 46% =0.46 | |
| 4. | $\dfrac{9}{20} = \dfrac{9}{20} \times \dfrac{100\ 5}{1} = 45\%$ | |
| 5. | $35\% \text{ of } 600 = \dfrac{35}{100} \times \dfrac{600\ 6}{1} = 210$ | (3rd Answer) |
| 6. | $\text{Load} = 30\% \text{ of } 1600 = \dfrac{30}{100} \times \dfrac{1600\ 16}{1}$ <br> $= 480 \text{ kg}$ | |
| 7. | $75\% \text{ of } \$240 = \dfrac{75\ 3}{4\ 100} \times \dfrac{240\ 60}{1} = \$180$ | (4th Answer) |
| 8. | $\dfrac{36\ 18}{40\ 2} \times \dfrac{100\ 5}{1} 5 \times 18 = 90\%$ | |
| 9. | $64\% = \dfrac{64}{100} = \dfrac{16}{25}$ | (2nd Answer) |
| 10. | $0.875 = 0.875 \times 100\% = 87.5\%$ | |
| 11. | Black and yellow T shirts make up 55% of total. <br> This leaves 45% which are red. | (3rd Answer) |
| 12. | Increase = 200 pieces <br> % increase $= \dfrac{200}{800} \times 100 = 25\%$ | |
| 13. | $P$ <br> Profit $= 60\% \text{ of } \$30 = \dfrac{60}{100} \times 30 = \$18$ <br> Selling price $= 30 + 18 = \$48.00$ | (2nd Answer) |
| 14. | Price with $GST = 110\% \text{ of } \$8$ <br> $= \dfrac{110}{100} \times 8 = \$8.80$ | |
| 15. | $110\% \text{ of price} = \$132$ <br> $10\% \text{ of price} = 132 \div 11 = \$12$ <br> $100\% \text{ of price} = 12 \times 10 = \$120$ | (2nd Answer) |

| 16. | Loss $= 500 - 320 = \$180$ <br> % Loss $= \$\dfrac{180}{500 \ 5} \times \dfrac{100}{1} = 36\%$ | |
|---|---|---|
| 17. | 200 ml for \$6.40 $= \dfrac{6.40}{2} = \$3.20$ per 100 ml <br><br> 300 ml for \$9.90 $= \dfrac{9.90}{3} = \$3.30$ per 100 ml <br><br> So the 200 ml bottle is better. | |
| 18. | 5% of the delivery were spoiled which is 15 bananas <br> 100% (5% $\times$ 20) of delivery is $15 \times 20 = 300$ bananas. <br> Number good bananas $= 300 - 15 = 285$ bananas | |

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| Calculator Allowed Short Answer Section ( 1 mark each) |
| :--- |

| Q no | | Answer |
| :---: | :--- | :--- |
| 1. | $\dfrac{4}{5} = \dfrac{4}{5} \times 100 = 80\%$ | (3rd Answer) |
| 2. | $\dfrac{7}{20} \times 100 = 35\%$ | |
| 3. | 5.5%=5.5 / 100 =0.055 | |
| 4. | There are $120 + 480 = 600$ books altogether. <br> % fiction $= \dfrac{480}{600} \times 100 = 80\%$ | |
| 5. | $1005 - 36\% = 64\%$ | (3rd Answer) |
| 6. | 35.5% of $ 6 400 = $2 272. | |
| 7. | $\dfrac{7}{8} = \dfrac{7}{8} \times 100 = 87.5\%$ | (2nd Answer) |
| 8. | $0.625 \times 36 = $ \$22.50 | (1st Answer) |
| 9. | $\dfrac{74}{85} \times 100 = 87.058 = 87\%$ ( nearest whole number ) | (4th Answer) |
| 10. | Profit $= 350000 - 250000 = 100000$ <br> %Profit $= \dfrac{100000}{250000} \times 100 = 40\%$ | |
| 11. | Decrese by 18% leaves 82% <br> 82% of 2480 $= 0.82 \times 2480 = $2 033.60 | |
| 12. | Loss $= 58 - 45 = 13$ <br> % Loss $= \dfrac{13}{58} \times 100 = 22.413 = 22\%$ (nearest whole number ) | (2nd Answer) |
| 13. | 110% of pre *GST price* $= 125.95$ <br> 10% of pre *GST price* $= 125.95 \div 11 = $11.45 <br> 100% of pre *GST* price $= 11.45 \times 10 = $114.50 | |
| 14. | Price after 20% discount $= 80\%$ of \$36 <br> $= 0.8 \times 36 = $28.80 <br> Price after 5% discount $= 95\%$ of 28.80 <br> $= 0.95 \times 28.8 = $27.36 $= $27.35 (nearest 5 c) | |

| 15. | $\dfrac{5}{8} = 62.5\%$ <br><br> 64% <br> 0.63 = 63% <br> $\dfrac{15}{25} = 60\%$ <br><br> In order   $\dfrac{15}{25}$    $\dfrac{5}{8}$    0.63    64% | |

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| | Answers Connected Answer Section | |
|---|---|---|
| | | |
| 1. | A pack of six 300 ml cans for $7.20. <br> $6 \times 300 \text{ ml} = 1800 \text{ ml} = 1.8 \text{ L}$ <br> $\$7.20 \div 1.8 = \$4.00 / L$ <br><br> Individual 375 ml cans for $2.80 each. <br> $375 \text{ ml} = 0.375 \text{ L}$ <br> $\$2.80 \div 0.375 = \$7.47 / L$ <br><br> Individual 1.25 litre bottles for $4.80 each. <br> $\$4.80 \div 1.25 = \$3.84 / L$ <br><br> Individual 2 litre bottles for $7.80. <br> $\$7.80 \div 2 = \$3.90 / L$ <br><br> The 1.25 L bottles are the best buy. | 2 marks for calculations similar to those shown for a comparative rate. <br><br> 1 mark for comparing and giving correct answer. |
| 2 | a) $85\%$ of $820 \; GB = 697 \; GB$ | 1 |
| | b) <br> 24% is used, so 76% remains. <br> $76\%$ of $4100 = 0.76 \times 4100 = 3116 \; GB$ | 1 |
| | c) 3116 available before backup, of 697 GB <br> Amount available after = 3116 – 697 = 2419 <br> $\%_{\text{remaining}} = \dfrac{2419}{4100} \times 100 = 59\%$ | 1 |