

High School Mathematics Test 2015

Year 9

Financial Maths & Simple Interest

Non Calculator

Skills and Knowledge Assessed:

- Solve problems involving profit and loss, with and without digital technologies (ACMNA189)
- Calculate discounts expressed as percentages.
- Solve problems involving simple interest (ACMNA211)

Name _____

Section 1 Short Answer Section

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

Simple Interest

$$I = PRN$$

I is the interest earned

P is the principal

R is the interest rate per period as a decimal

N is the number of periods

1. Find 55% of 800.

.....
.....

2. Hugo paid \$25 000 for a motorbike and later sold it for \$16 000.

What was his loss as a percentage of the cost price?

.....
.....

3. An electrical store bought a microwave oven for \$80.00 and sold it at a 40% profit.

How much profit do they make on the oven?

.....
.....

4.	Calculate 5% p.a. simple interest on \$450 for 4 years.
5.	A ticket to a footy game costs \$42.00 plus 10% GST. What is the price of the ticket, including GST?
6.	A travel agent offers a 30% discount on all cruises. What would you pay for a river cruise normally priced at \$3 500.
7.	Imogen buys the raw materials to make a rustic necklace for \$32.00 and sells the necklace at an 80% profit. What is the selling price of the necklace?
8.	Jacob has \$3 000 to invest and would like to use the interest to help pay for his birthday party which is in 6 months' time. The best simple interest rate that he can find for a six month term is 8% p.a. How much will he be able to put toward his party?
9.	Jamie has 30% of his income taken out for tax. He has \$630 left after the tax was taken. How much was taken out for tax?

10.	Nicole borrows \$900 at 4% p.a. simple interest. The loan and interest is to be repaid after 3 years. How much will she pay back?
11.	The price of a barbeque is \$286, including 10% GST. When a charity buys the barbeque it does not have to pay GST. What will the charity pay for the barbeque?
12.	Daniella invests \$6 500 for 9 months in an account that pays 4% p.a. simple interest. How much interest will she earn?
13.	Roy buys a bed which has a cash price of \$640, on time payments. He pays a deposit of \$80 and makes monthly payments of \$30.00 for two years. How much does he pay in interest?
14.	Miranda has an investment of \$750 that earned \$150 in simple interest in 4 years. What was the simple interest rate?
15.	Leah budgets 40% of her income for rent and 35% for food. She puts aside \$180 for rent. How much should she set aside for food?

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Calculator Allowed

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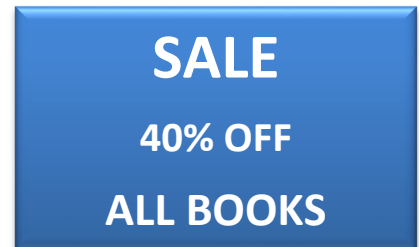
Section 2 Multiple Choice Section

Mark all your answers on the accompanying multiple choice answer sheet, not on this test paper. You may do any working out on this test paper. Calculators are allowed for this section.

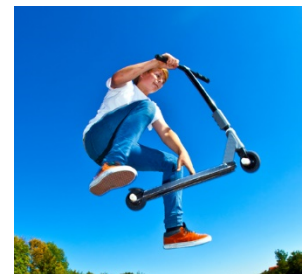
1. What is 32% of 175?
- A. 28 B. 56 C. 64 D. 112

2. Vivien bought a TV for \$1 300 and sold it a year later for \$715.
What was her percentage loss on the cost price?
- A. 45% B. 56% C. 65% D. 82%

3. Yasmin bought a textbook normally priced at \$85.00
at the sale advertised at right.
What did she pay for the book?
- A. \$34 B. \$40
C. \$51 D. \$60



4. The price of a razor scooter is \$110 before 10% GST
is added.
What was the price after adding the GST?
- A. \$120 B. \$121
C. \$132 D. \$165



5. Lara invests \$6 500 at 7% p.a. for 3 years. How much interest does she earn?
- A. \$1 365.00 B. \$2 047.00 C. \$2 730.00 D. \$136 500.00

6.	Kim sees a Games Console advertised at a sale price of \$1 309. The console normally sells for \$1 540. What percentage discount is being offered at the sale?
	A. 5% B. 10% C. 15% D. 20%
7.	A service station buys petrol at a wholesale price of \$0.95 per litre and adds a 40% profit margin. What is the selling price of the petrol? (Answer to the nearest percent.)
	A. \$1.08 B. \$1.18 C. \$1.25 D. \$1.33
8.	Cameron receives a discount of 30% off the full price of a camera. He paid \$245 for the camera. What was the full price of the camera, before the discount?
	A. \$275.00 B. \$318.50 C. \$350.00 D. \$817.00
9.	Flynn borrows \$2 250 and pays simple interest on the principal for 3½ years at 12% p.a. How much interest does she pay?
	A. \$270.00 B. \$540.00 C. \$ 787.50 D. \$945.00
10.	Amelia invests \$3 600 in an account which pays 5.5% p.a. simple interest. How much will she earn in interest in 3 years?
	A. \$198.00 B. \$594.00 C. \$1 188.00 D. \$1 980.00
11.	Sienna invests \$800 at 7.5% p.a. simple interest for a period of 9 months. How much interest does she earn?
	A. \$45.00 B. \$60.00 C. \$75.00 D. \$90.00
12.	A hardware makes a 45% profit on the cost price of sales of power tools. The store sells a cordless drill for \$116. How much profit did they make?
	A. \$36.00 B. \$45.00 C. \$52.20 D. \$80.00
13.	Dakota wants to earn \$2 850 in interest in 1½ years. The best simple interest rate that she can find is 7.6% p.a. How much would she need to invest to achieve her aim?
	A. \$20 000 B. \$21 140 C. \$22 880 D. \$25 000

14. Riley invested \$6 200.00 for 18 months in an account that paid \$511.50 in simple interest at maturity. What was the annual interest rate?

A. 4.9% pa B. 5.3% pa C. 5.5% pa D. 5.8% pa

15. Charlotte compares the price of three sizes of cereal pack.

Regular Pack



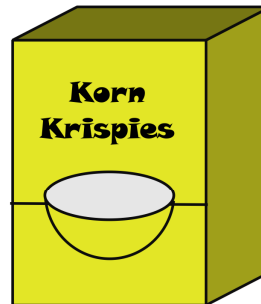
750 g pack for
\$9.00

Snack Pack



250 g pack for
\$3.50

Economy Pack



1.25 kg pack for
\$15.00

Which gives the best value for money?

- A. The Economy Pack is the best value.
B. The Regular Pack is the best value.
C. The Snack pack and Regular Pack are equal as best value.
D. The Economy pack and Regular Pack are equal as best value.

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Multiple Choice Answer Sheet

Financial Maths & Simple Interest

Name _____

Completely fill the response oval representing the most correct answer.

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Section 1 Short Answer Section

ANSWERS

No.	WORKING	ANSWER
1.	$55\% \text{ of } 800 = \frac{55}{100} \times \frac{800}{1} = 55 \times 8$ $\begin{array}{r} 55 \times \\ \underline{8} \\ 440 \end{array}$	440
2.	$\text{Dollar loss} = 25000 - 16000 = 9000$ $\text{Percentage loss} = \frac{9000}{25000} \times \frac{100}{1}$ $= \frac{9}{25} \times \frac{100}{1}$ $= 9 \times 4$ $= 36\%$	36%
3.	$\text{Profit} = 40\% \text{ of } 80$ $= \frac{40}{100} \times \frac{80}{1}$ $= 4 \times 8$ $= \$32$	\$32
4.	$I = \frac{PRN}{100}$ $= \frac{9450}{1} \times \frac{5}{100} \times \frac{42}{1}$ $= 9 \times 5 \times 2$ $= \$90$	\$90
5.	$GST = 0.1 \times 42 = 4.20$ $\text{Price with } GST = 42.00 + 4.20$ $= \$46.20$	\$46.20
6.	$\text{Discount} = \frac{30}{100} \times \frac{3500}{1}$ $= 30 \times 35$ $= \$1\,050$ $\text{Discounted price} = 3500 - 1050$ $= \$2\,450.$	\$2 450

7.	$\text{Profit} = 0.8 \times 32$ $= \$25.60$ $\text{Selling price} = 32.00 + 25.60$ $= \$57.60$	\$57.60
8.	$I = PRN$ $I = 3000 \times \frac{8}{100} \times \frac{1}{2}$ $= 30 \times 8 \times \frac{1}{2}$ $= \$120$	\$120
9.	$\$630 = 70\% \text{ of his income}$ $\$9 = 1\% \text{ of income}$ $\text{Tax} = 30\% \text{ of income}$ $= 30 \times \$9$ $= \$270$	\$270
10.	$I = PRN$ $= 900 \times \frac{4}{100} \times 3$ $= 9 \times 4 \times 3$ $= \$108$ $\text{Repays } 108 + 900$ $= \$1\,008$	\$1 008
11.	$110\% \text{ of Non } GST \text{ price} = 286$ $10\% \text{ of Non } GST \text{ price} = \frac{286}{11} = 26$ $100\% \text{ of Non } GST \text{ price} = 26 \times 10 = \260	\$260
12.	$I = PRN$ $= \frac{6500}{1} \times \frac{4}{100} \times \frac{3}{4}$ $= 65 \times 1 \times 3$ $= \$195$	\$195
13.	$\text{Amount paid} = 80 + 30 \times 24$ $= 80 + 720$ $= 800$ $\text{Interest} = 800 - 640 = \160	\$160
14.	$I = PRN$ $150 = 750 \times R \times 4$ $150 = 3000 \times R$ $R = \frac{150}{3000} = \frac{15}{300} = \frac{5}{100} = \frac{1}{20}$ <p>Rate is 5%</p>	5% pa

15.	40% of $I = 180$ 5% of $I = 180 \div 8 = 22.5$ 35% of $I = 22.5 \div 7 = 157.5$ Amount for food = \$157.50	\$157.50
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Calculator Allowed

Section 2

Multiple Choice Section

ANSWERS

No.	WORKING	ANSWER
1.	$0.32 \times 175 = 56$	B
2.	$\text{Loss} = 1300 - 715 = 585$ $\text{Percentage loss} = \frac{585}{1300} \times 100 = 45\%$	A
3.	$\text{Discounted Price} = 0.6 \times \85 $= \$51$	C
4.	$GST = 0.1 \times 110 = \$11$ $\text{Price with GST} = 110 + 11 = \121	B
5.	$I = PRN$ $= 6500 \times 0.07 \times 3$ $= \$1\,365.00$	A
6.	$\text{Discount} = 1540 - 1309 = \231 $\text{Percent Discount} = \frac{231}{1540} \times 100 = 15\%$	C
7.	$\text{Profit} = 0.95 \times 0.4 = \0.38 $\text{Selling price} = 0.95 + 0.38 = \1.33	D
8.	$\text{Discount price} = 70\% \text{ of full price}$ $245 = 0.7 \times P$ $P = \frac{245}{0.7}$ $= \$350$	C
9.	$I = PRN$ $= 2250 \times 0.12 \times 3.5$ $= \$945$	D
10.	$\text{Interest} = PRN$ $= 3600 \times 0.055 \times 3$ $= \$594.00$	B

11.	<p>9 months is $\frac{3}{4}$ of a year.</p> <p>Interest = PRN $= 800 \times 0.075 \times 0.75$ $= \\$45.00$</p>	A
12.	<p>$\\$116 = 145\%$ of cost price $116 = 1.45 \times C$ $C = \frac{116}{1.45} = \\80.00 Profit = $116 - 80 = \\$36.00$</p>	A
13.	<p>$I = PRN$ $2850 = P \times 0.076 \times 1.5$ $2850 = 0.114 \times P$ $P = \frac{2850}{0.114}$ $\\$25\,000.00$</p>	D
14.	<p>$I = PRN$ $511.50 = 6200 \times R \times 1.5$ $511.50 = 9300 \times R$ $R = \frac{511.5}{9300}$ $R = 0.055$ Rate is 5.5% pa</p>	C
15.	<p>Regular Pack Amount per dollar = $\frac{750}{9} = 83.\dot{3}$ g per \$</p> <p>Snack Pack Amount per dollar = $\frac{250}{3.5} = 71.\dot{4}$ g per \$</p> <p>Economy Pack Amount per dollar = $\frac{1250}{15} = 83.\dot{3}$ g per \$</p> <p>Regular and Economy are equal best value for money.</p>	D

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Multiple Choice Answer Sheet Financial Maths & Simple Interest

Name ANSWERS

Completely fill the response oval representing the most correct answer.

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