

# High School Mathematics Test 2014

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. What is 80% of 600?

.....  
.....

2. A store bought a necklace for \$120.00 and sold it at a 60% profit.  
How much profit did they make?

.....  
.....

3. Cedric buys a car for \$5 000 and sells it later for \$4 200.  
What was his loss as a percentage of the cost price?

.....  
.....

4. The price of a model car is \$65.00 before 10% GST is added.  
What is the price, including GST?
- .....
- .....
5. Calculate 8% p.a. simple interest on \$500 for 3 years.
- .....
- .....
6. Marika buys jeans for \$25.00 each and sells them at a 40% profit.  
What is the selling price of the jeans?
- .....
- .....
7. The Horse and Country saddlery store offers a 40% discount on all stock.  
What would you pay for a bridle normally priced at \$75.00
- .....
- .....
8. Fanciful Furniture puts a 30% mark-up on its stock.  
What would be the selling price of a lounge which had a cost price of \$340.00?
- .....
- .....
9. Mary loans her sister \$900 at 6% p.a. interest to be repaid in 4 years.  
How much interest should her sister pay?
- .....
- .....
10. Cheryl wants to invest some money so as to earn \$900 in interest in 4 years.  
The best simple interest rate that she can find is 15% p.a.  
How much would she need to invest to achieve her aim?
- .....
- .....

- 
11. Andrew buys a wall unit valued at \$860, on time payments.  
He pays a deposit of \$50 and makes monthly payments of \$30.00 for three years.  
How much interest does he pay?
- .....
- .....
- 
12. A store advertises a desk for sale at \$715 including 10% GST.  
What was the price before GST was added?
- .....
- .....
- 
13. Neil invests \$3 000 for 2  $\frac{1}{2}$  years in an account that pays 8% p.a. simple interest.  
How much interest will he earn?
- .....
- .....
- 
14. Kat borrows \$840 off her mum to buy a laptop. She agrees to pay it back after 8 months plus simple interest at 12% p.a.  
How much will she repay?
- .....
- .....
- 
15. Joan has an investment of \$6 000 that earned \$1 440 in simple interest in 4 years. What was the simple interest rate?
- .....
- .....
-

# High School Mathematics Test 2014

Year 9

## Financial Maths & Simple Interest

Calculator Allowed

Name \_\_\_\_\_

### 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 35% of 800?

- A. 70                      B. 140                      C. 210                      D. 280

2. The price of a picture frame is \$12 before 10% GST is added.  
What was the price after adding the GST?

- A. \$12.10                      B. \$13.00                      C. \$13.20                      D. \$15.00

3. Jack bought his car for \$12 000 and sells it a year later for \$9 000.  
What was his percentage loss?

- A. 20%                      B. 25%                      C. 30%                      D. 33%

4. Hayley buys a smart phone, normally priced at \$280, at this sale.  
What did she pay for the phone?

- A. \$196.00                      B. \$210.00  
C. \$250.00                      D. \$265.00

**SALE**  
**30% OFF**  
**EVERYTHING**

5. Glenn invests \$8 000 at 5% p.a. for 4 years. How much interest does he earn?

- A. \$800                      B. \$1 600                      C. \$5 010                      D. \$9 600

6. Michael receives a discount of 12% off the full price of a new jacket.  
He paid \$110 for the jacket.  
What was the full price, before the discount?

- A. \$120.00                      B. \$122.00                      C. \$123.10                      D. \$125.00

7.	Margaret lists her bike for sale at \$250. Stacey says she should increase the price by 20%. If Margaret follows her advice, what price will he offer the bike for? A. \$200      B. \$270      C. \$300      D. \$325
8.	The price of petrol dropped from \$1.75 per litre to \$1.50 per litre. Find the percentage decrease in price (to the nearest percent.) A. 14%      B. 17%      C. 20%      D. 25%
9.	Maisie borrows \$250 and pays simple interest on the principal for $3\frac{1}{2}$ years at 12% p.a. How much interest does she pay? A. \$90      B. \$105      C. \$120      D. \$125
10.	Anthea invests \$5 000 at 6.25% p.a. simple interest for a period of 2 years. How much interest does she earn? A. \$125      B. \$625      C. \$3 125      D. \$6250
11.	Peta compares two specials on Club Cola for a party. Two litre bottles are on special at 2 bottles for \$5.00. Packs of six 600 ml bottles are on special for \$4.50 per pack. Which is true? A. The 600 ml bottles are better value per litre. B. The two litre bottles are better value per litre. C. Both sized bottles are equal value per litre. D. There is not enough information to decide which is the best value.
12.	An electrical store makes a 70% profit on the cost price of all of its sales. The store sells a television for \$816. How much profit did they make? A. \$336.00      B. \$408.00      C. \$480.00      D. \$571.20
13.	Daniel invests \$6 500 at 8.5% p.a. simple interest for a period of 9 months. How much interest does she earn? A. \$414.38      B. \$828.75      C. \$621.56      D. \$4 972.50
14.	Linda wants to earn \$500 in interest in 6 months. The best simple interest rate that she can find is 9.5% p.a. How much would he need to invest to achieve her aim? A. \$877      B. \$1 053      C. \$5 264      D. \$10 527
15.	Gidget invested \$3 600.00 for 18 months in an account that paid her \$405.00 in simple interest at maturity. What was the annual interest rate? A. 6.0%      B. 6.5%      C. 7.0%      D. 7.5% p.a.

# *High School Mathematics Test 2014*

## Financial Maths & Simple Interest

### Multiple Choice Answer Sheet

Name \_\_\_\_\_

Completely fill the response oval representing the most correct answer.

- |     |   |                       |   |                       |   |                       |   |                       |
|-----|---|-----------------------|---|-----------------------|---|-----------------------|---|-----------------------|
| 1.  | A | <input type="radio"/> | B | <input type="radio"/> | C | <input type="radio"/> | D | <input type="radio"/> |
| 2.  | A | <input type="radio"/> | B | <input type="radio"/> | C | <input type="radio"/> | D | <input type="radio"/> |
| 3.  | A | <input type="radio"/> | B | <input type="radio"/> | C | <input type="radio"/> | D | <input type="radio"/> |
| 4.  | A | <input type="radio"/> | B | <input type="radio"/> | C | <input type="radio"/> | D | <input type="radio"/> |
| 5.  | A | <input type="radio"/> | B | <input type="radio"/> | C | <input type="radio"/> | D | <input type="radio"/> |
| 6.  | A | <input type="radio"/> | B | <input type="radio"/> | C | <input type="radio"/> | D | <input type="radio"/> |
| 7.  | A | <input type="radio"/> | B | <input type="radio"/> | C | <input type="radio"/> | D | <input type="radio"/> |
| 8.  | A | <input type="radio"/> | B | <input type="radio"/> | C | <input type="radio"/> | D | <input type="radio"/> |
| 9.  | A | <input type="radio"/> | B | <input type="radio"/> | C | <input type="radio"/> | D | <input type="radio"/> |
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| 13. | A | <input type="radio"/> | B | <input type="radio"/> | C | <input type="radio"/> | D | <input type="radio"/> |
| 14. | A | <input type="radio"/> | B | <input type="radio"/> | C | <input type="radio"/> | D | <input type="radio"/> |
| 15. | A | <input type="radio"/> | B | <input type="radio"/> | C | <input type="radio"/> | D | <input type="radio"/> |

# High School Mathematics Test 2014

## Financial Maths & Simple Interest

### ANSWERS

Section 1 ( 1 mark each)	
Working and Answers	
1.	$80\% \text{ of } \$600 = 0.8 \times 600$ $= \$480.00$
2.	$\text{Profit} = 60\% \text{ of } 120$ $= 0.6 \times 120$ $= \$72.00$
3.	$\text{Loss} = \$800$ $\% \text{ Loss} = \frac{800}{5000} \times 100$ $= \frac{800}{50}$ $= 16\%$
4.	$GST = 10\% \text{ of } \$65$ $= 0.1 \times 65 = 6.50$ $\text{New price} = 65 + 6.50$ $= \$71.50$
5.	$\text{Simple Interest} = PRN$ $= 500 \times 0.08 \times 2$ $= \$80.00$
6.	$\text{Profit} = 40\% \text{ of } 25$ $= 0.4 \times 25$ $= \$10.00$ $\text{Selling price} = 25 + 10$ $= \$35.00$
7.	$\text{Discount} = 40\% \text{ of original price}$ $\text{New price} = 60\% \text{ of original price}$ $= 0.6 \times 75$ $= \$450$
8.	$\text{Mark-up} = 30\% \text{ of } 340$ $= 0.3 \times 340$ $= \$102$ $\text{Selling price} = 340 + 102$ $= \$442$
9.	$S I = 900 \times \frac{6}{100} \times 4$ $= 9 \times 6 \times 4$ $= \$216$

10.	$SI = PRN$ $900 = P \times 0.15 \times 4$ $900 = 0.6 \times P$ $P = \frac{900}{0.6}$ $= \frac{9000}{6}$ $= \$1500$
11.	$\text{Amount paid} = 30 \times 36 + 50$ $= 1080 + 50$ $= 1130$ $\text{Interest} = 1130 - 860$ $= 270$
12.	$\text{Pre GST price} = 715 \div 1.1$ $= 7150 \div 11$ $= \$650$
13.	$SI = PRN$ $= 3000 \times 0.08 \times 2.5$ $= 240 \times 2.5$ $= 480 + 120$ $= \$600$
14.	$SI = PRN$ $= 840 \times \frac{\cancel{12}}{100} \times \frac{8}{\cancel{12}}$ $= \frac{8 \times 840}{100}$ $= \frac{6720}{100}$ $= 67.20$ <p>She repays <math>840 + 67.20 = \\$907.20</math></p>
15.	$SI = PRN$ $1440 = 6000 \times R \times 4$ $1440 = 24000 \times P$ $P = \frac{1440}{24000}$ $= \frac{144}{2400}$ $= \frac{12}{200}$ $= \frac{6}{100}$ <p>Rate is 6%</p> $= \$1500$



Section 2 (1 mark each)		
	Working	Answers
1.	$0.35 \times 800 = 280$	D
2.	Price after <i>GST</i> = $\$12 \times 1.1$ = $\$13.20$	C
3.	Loss = 3000 % Loss = $\frac{3000}{12000} \times 100$ = 25%	B
4.	Price = $280 \times 0.70$ = $\$196.00$	A
5.	Interest = <i>PRN</i> = $8000 \times 0.05 \times 4$ = $\$1\ 600$	B
6.	Discount price = 88% of full price 88% of full <i>price</i> = $\$110$ 1% of full <i>price</i> = $\frac{110}{88} = 1.25$ 100% of full <i>price</i> = $1.25 \times 100 = \$125.00$	D
7.	New price = $250 \times 1.2 = \$300$	C
8.	Drop in price = $\$0.25$ % Drop = $\frac{0.25}{1.75} \times 100$ = 14.2857 = 14%	A
9.	<i>I</i> = <i>PRN</i> = $250 \times 0.12 \times 3.5$ = $\$105$	B
10.	<i>I</i> = <i>PRN</i> = $5000 \times 0.0625 \times 2$ = $\$625$	B
11.	The 6 $\times$ 600 ml bottles hold 3.6 litres. Cost per litre = $\$4.50 \div 3.6 = \$1.25$ per litre The 2 $\times$ 2 litre bottles hold 4 litres. Cost per litre = $\$.500 \div 4 = \$1.25$ per litre They are equal value.	C
12.	170% of cost price = 816 10% of cost price = $816 \div 17 = \$48$ 70 % on cost price = $\$48 \times 7 = \mathbf{\$336}$	A

13.	$SI = 6500 \times 0.085 \times \frac{9}{12}$ $= 414.375$ $= \$414.38$	A
14.	$SI = PRN$ $500 = P \times 0.095 \times 0.5$ $500 = 0.0475P$ $P = \frac{500}{0.0475}$ $= 10526.31578$ $= \$10\,527$	D
15.	$SI = PRN$ $405 = 3600 \times R \times 1.5$ $405 = 5400R$ $R = \frac{405}{5400}$ $= 0.075$ <p>Interest rate = 7.5% p.a.</p>	D

# High School Mathematics Test 2014

## Financial Maths & Simple Interest

### Multiple Choice Answer Sheet

Name Marking Sheet

Completely fill the response oval representing the most correct answer.

- |     |   |                                  |   |                                  |   |                                  |   |                                  |
|-----|---|----------------------------------|---|----------------------------------|---|----------------------------------|---|----------------------------------|
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