Carlingford High School Mathematics Assessment Task

Year 9 (Mathematics 5.2)
Term 1 Exam
2020

Student Name: _____ 9MA2 _____

9MA21 (Mrs Virmani) 9MA2X (Mr Wilson) 9MA2Y (Mr Fardouly/Mrs Strilakos)

Time Allowed: 55 minutes

Instructions:

- All answers must be written in black pen
- An acceptable calculator may be used
- Show all necessary working
- Write all answers clearly (the marker cannot mark what they cannot read!)

Topic	Mark
Financial Mathematics	**/27**
Algebraic Techniques	**/40**
Total	**/67**

Financial Mathematics	
Question, Working and Answer	**Marks**
1. A music System originally priced at $16000 is sold for $1250. Find the: (a) Loss (b) Percentage loss	**2**
2. A computer salesperson is paid a monthly retainer of $750 and a commission of 1.5% of the value of computers sold. If his February sales were $867 400, Calculate their income for this month.	**2**
3. Calculate the simple interest on an investment of $280 000 at 8.3% p.a. for 8 years.	**2**
4. After 2 years, an investment of $1560 has earned $87.36 in simple interest. What is the annual interest rate?	**2**
5. Which one of the following hourly rates is better? (Use 1 year = 52.18 weeks) A. An annual salary of $54706 for a 38 hour week. B. $982 for a 37 hour week.	**3**

6. Chris earns $14 for each laptop he sells. How many laptops will Chris need to sell to earn exactly $280.	**2**
7. Molly earns a salary of $634 000 p.a. (Use 1 year = 52.18 weeks) (a) How much is she paid each week? (a) How much is she paid each fortnight?	**2**
8. Debbie bought 34.8 litres of petrol for $50.12. What is the cost per litre, correct to nearest cent?	**2**
9. Jessie worked her normal 38 hours, then 4 hours at time and a half and 5 hours at double time. She was paid $909.90 for the week. Find her hourly rate of pay.	**2**
10. Shreya works 7.5 hours each weekday and 4 hours on Saturdays, for a total of $748.66. (a) How many hours does Shreya work? (b) How much does she earn per hour?	**2**

11. In a financial year Scott is employed as a hiring manager with a salary of $78000 per year. He also earns interest that year of $1580 from a term deposit, and has allowable deductions of $120 for union fees, $150 in association fees, $320 for work-related education expenses, and $420 for donation to charity. **2**

(a) What is his gross income?

(b) What is his taxable income?

12. Jeremy earns $2145 per fortnight and has allowable annual deduction of $337. **2**

Taxable Income ($)	Tax Payable ($)
0 – $18 200	Nil
$18 201 – $37 000	19c for each $1 over $18 200
$37 001 – $90 000	$3 572 plus 32.5% of amounts over $37 000
90 001 – 180 000	$20 797 plus 37% of amounts over $90 000
$180 001 and over	$54 096 plus 45% of amounts over $180 000

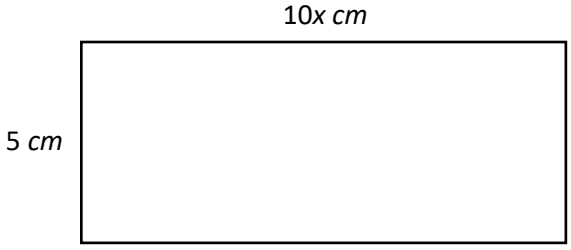
Use the given tax table to find how much tax he should have paid.

13. Sofia earns a gross income of $864.25 per week. Her deductions are $141.94 for tax and $51.33 for private health insurance. Find: **2**

(a) Sofia's net income.

(b) Net Income as a percentage of her gross income, correct to 1 decimal place.

Algebraic Techniques	
Question, Working and Answer	**Marks**
1. Write an algebraic expression for each statement. (a) Five more than a number *n*. (b) Five subtracted from the product of 5 and a number *x*. (c) Two subtracted from *t* then divided by 7. (d) The product of *n* and *m*.	**4**
2. Find the value of $3x^2 - 2y$, where $x = -4$ and $y = 7$.	**2**
3. Simplify: (a) $9b - 12b^2 - 6b^2 - 15 + 3b$ (b) $2fg + 3fg - 6gf + 2$ (c) $2 \times 5p \times 7x$ (d) $-25yz \div 5y$ (e) $\frac{9p}{-45pq}$	**10**

4. Write a simplified algebraic expression for perimeter of a rectangle with dimensions 10*x cm* and 5*cm*.  	**2**
5. Simplify: (a) $\frac{11y}{2h} - \frac{7y}{2h}$	**2**
(b) $\frac{3}{4} + \frac{7a}{10}$	**2**
(c) $\frac{6}{r} \times \frac{5r}{9} \div \frac{15}{h}$	**3**
6. (a) Expand and simplify: (i) $4y(1 + 3y)$ (ii) $8 - 5(2x - 7)$ (b) Factorise $15k - 10k^2h + 5k$	**6**

7. Expand and simplify the following binomial products. (a) $(4r - 35)(4r + 35)$ (b) $(2r + 5)(3r - 7)$	**4**
8. A rectangular mat has length 100cm and width 75cm. The length and width are both increased by $x\ cm$. (a) Write and expression for the new length of the mat. (b) Write and expression for the new width of the mat. (c) Hence write a simplified expression for the new area of the mat. (d) By how much has the area of the mat increased? (e) If $x = 1\ cm$, find the new area.	**5**

END OF TEST