

HILLCREST HIGH SCHOOL



Grade 10 Mathematical Literacy Exam

November 2015

Examiner: T. Farquhar

Moderator: B. Hopkins

Marks: 75

Paper 2

Time: 1.5 Hours

Instructions:

1. Write your name and your teachers name on your answer book.
2. Answer all the questions in the order that they appear on the question paper.
3. Number the answers correctly according to the numbering system used in the question paper.
4. A calculator may be used.
5. All calculations and steps must be shown.
6. All final answers must be rounded off to two decimal places.
7. Write neatly.

### QUESTION 1

Answer the following:

- 1.1 Jacks living expenses amount to R3100 per month. Which of the following two Jobs should he apply for to meet his needs? Show all working.
- a) CleanAuto Carwashes pays R128 per day for 20 working days per month.
- or
- b) Flowersgalore Florists pays R115 per day for 28 working days per month. (2)
- 1.2 Calculate Lucy's payment rate per hour if she works  $7\frac{1}{2}$  hours per day for 5 days and earns R787.50 in total (2)
- 1.3 Mark budgeted for the month of December as follows:

Income:		R5 530 (after tax has been subtracted)
Expenses:	Gasoline	R1 650
	Transport	R 320
	Clothing	R 700
	Rent	R1 720
	Entertainment	R 200
	School fees	R 450
	Medical aid	R1 100
	Telephone	R 155
	Water and electricity	R 375

- 1.3.1 Calculate Marks budgeted expenses for the month of December. (1)
- 1.3.2 What amount will be available for savings? (1)
- 1.3.3 If transport costs increase by 5%, what will Mark have to budget for transport following month? (3)
- 1.3.4 Mark drives 40 km to work every day and travels at an average speed of 90 km/h. How long will Mark take to get to work each day? Leave your answer in the form of hours, minutes and seconds. (4)

Manipulate the formulae:  $\text{Distance} = \text{Speed} \times \text{Time}$  to help answer this question.

[14]

### QUESTION 2

- 2.1 A table is 2 meters long and 140cm wide. Determine the ratio of the length to the width. Simplify your answer. (3)

- 2.2 R800 000 is inherited by 3 sisters, Jessica, Lauren, and Amy in a ratio of 2:3:5 respectively. How much does each sister get? (3)

[6]

### QUESTION 3

- 3.1 Cynthia invests R 200 450 for 7 years at a simple interest rate of 6%.
- 3.1.1 How much does she have at the end of her investment? (3)
- Use this formulae to help you: **Simple Interest**  $A = P(1 + in)$
- 3.2 Tomas buys a motor vehicle for R182 550. He pays it off over 3 years at a rate of 8% compound interest.
- 3.2.1 What is the total amount he pays back to the bank? (3)

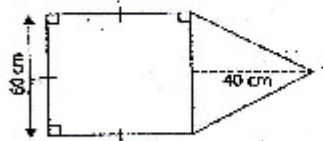
[6]

### QUESTION 4

Use a selection of the formula below to help you with the following questions

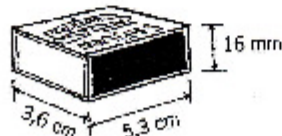
$A = l \times b$	$A = \frac{1}{2} D \times H$	$V = L \times B \times H$	$1 \text{ cm} = 10 \text{ mm}$
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- 4.1 Workout the area of the following shape.



(4)

- 4.2 The dimensions of a matchbox are as follows: The length is 5,3 cm, the breadth is 3,6cm and the height is 16mm. Calculate the volume in  $\text{cm}^3$ .



(4)

[8]

**QUESTION 5**

Jason purchased the following items from a store. His receipt/invoice for the transaction can be found below. Answer the questions that follow in relation to this financial document.

GREEN MARKET STORE	
Welcome to our Store 21 Brickfields Rd Tel No: 031 645 1228 VAT NO 150892348875 Retain as proof of purchase	
LAST DAY FOR A FULL REFUND IS 18/04/2013 Except for SALE items purchased	
	T-SHIRT/RED 23.99
R45.99	less sale 50% R23.99
	TRACK PANTS/GREY 89.99
	SARDINES/200G TIN 20 5.99 *
	RISOTTO/GINGER 500G 14.49
	0.5L MILK 8.95 *
	TOMATOES 1KG 11.95 *
	EGGS 6 JUMBO 20 7.99 *
	SUNDAY TIMES NEWS 15.00
	CRISPS/CHEESE 8.59
<b>*** TOTAL</b>	[ ] <b>A</b>
CARD FNB	219.17
ACCOUNT NR *****47654	
CHANGE	0.00
	Total Promotion Disc 23.99
-----TAX INVOICE-----	
14% VAT	[ ] <b>B</b>
VAT TOTAL	
-----VALID VAT INVOICE-----	
18/03/2013 13:10 CASHIER - James Herfield	

- 5.1 What does VAT stand for? (1)
- 5.2 Mention 1 item on the receipt where VAT is not charged. (1)
- 5.3 Calculate the values that should appear in the blocks labelled A and B.
  - 5.3.1 Block A- The total value of the receipt. This is how much Jason pays. (1)
  - 5.3.2 Block B- The total VAT payable. (3)
- 5.4 Why are some items VAT exclusive? (2)

- 5.5 What payment method does Jason use to pay this bill? (1)
- 5.6 For what reason does the receipt not display the full account number? (1)

[10]

### QUESTION 6

Felicity works for the ABC Electronics Company, her pay slip is indicated below. She has recently received a job offer from Magic Electronics and wants to compare the salary at each company to decide whether she should take the new job at Magic Electronics, based on which income is higher.

#### ABC Electronics

Employee Name:	Felicity De Beer
Pay Period:	1 June to 30 June, 2015
<b>Monthly Payment</b>	
Gross salary	20 000
Overtime Pay	2 500
Total Pay	22 500
<b>Deductions</b>	
Medical Aid contribution from employee	1 900
Retirement Fund contribution from employee	1 750
Tax Amount	2 450
Total Deductions	
<b>TOTAL AMOUNT PAYABLE TO EMPLOYEE</b>	<b>18 175</b>

Magic Electronics offered Felicity a total package of R 29 000 per month CTC.

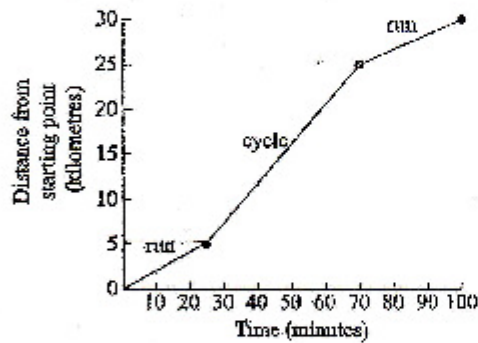
(CTC means that this is the total amount an employee will get payed, before tax and deductions)

- 6.1 What percentage of her gross salary does Felicity pay on Tax at ABC Electronics? Round off to the nearest whole percentage. (3)
- 6.2 Calculate the difference between the Gross salary that Felicity earns at ABC Electronics and what she could earn at Magic Electronics. (3)
- 6.3 Which job should Felicity take? Give a reason for your answer. (2)
- 6.4 If Felicity gets a 9.2% increase on her salary from Magic Electronics on the 1st of January 2016. Calculate her new gross salary. (3)

[11]

### QUESTION 7

An athlete trains by running, cycling, and then running again. The distance she trains is measured against the time and is shown in the graph below.

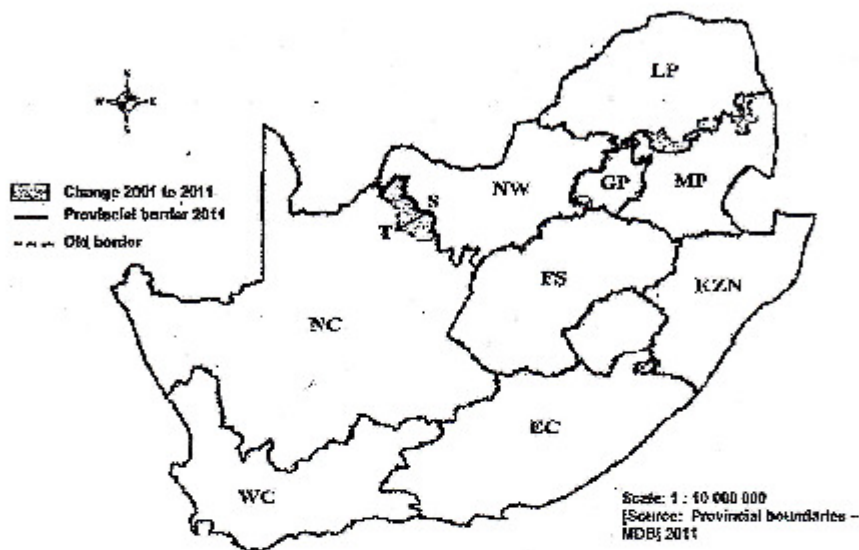


- 7.1 How far does she cycle? (1)
- 7.2 Which is done faster, the first or the second run? Support your answer with a calculation. (3)

[4]

**QUESTION 8**

Below is a map that shows the provincial boundary changes from 2001 to 2011. The provincial boundary changes are changes to the borders of provinces as a result of municipalities that were absorbed into other provinces.

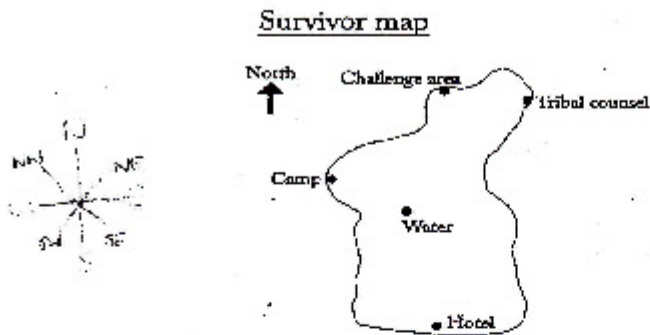


KZN - KwaZulu-Natal	EC - Eastern Cape	FS - Free State
WC - Western Cape	NC - Northern Cape	NW - North West
GP - Gauteng	MP - Mpumalanga	LP - Limpopo

Hint 1cm = 0,01m

- 8.1 Lindy resides at point T in the Northern Cape. Determine, using measurement, the actual distance (FS) from Lindy's home (T) to point S on the new boundary. Give your answer in metres. (4)

8.2 Use the map below to answer the following questions:



This map is given to survivor contestants; use it to determine

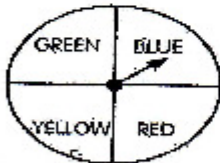
8.2.1 The bearing of the camp from the water (2)

8.2.2 The direction of the tribal council to the hotel (2)

[8]

**QUESTION 9**

A spinner as indicated is spun and a dice is rolled



9.1 Draw a tree diagram that shows the different combination possibilities if you spin the spinner and roll the dice. (4)

9.2 How many different possible outcomes are there? (2)

9.3 What is the probability of spinning a green and getting an even number (2)

[8]