

HILLCREST HIGH SCHOOL



Grade 11 Mathematical
Literacy Exam
Paper 2
June 2016

Examiner: Mr. Hopkins

Moderator:

MARKS: 100

TIME: 2 hours

INSTRUCTIONS

1. Write your name and your teacher's name on your answer book.
2. This question paper consists of 6 questions. Answer ALL the questions.
3. Number the questions correctly according to the number system used in this question paper.
4. Start EACH question on a NEW page.
5. You may use an approved calculator (non-programmable and non-graphical), unless stated otherwise.
6. Show ALL calculations and steps clearly.
7. Round off ALL final answers to TWO decimal places, unless stated otherwise.
8. Indicate units of measurement, where applicable.
9. Maps and diagrams are NOT necessarily drawn to scale, unless otherwise stated.

Question 1

The account below represents Mrs Jones water bill for the month of February. Some cells in the account have been left blank (Cells A, B, C, D). Calculate the answers to the following questions.

CAPE TOWN MUNICIPALITY: Water Account
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Statement Date	17/04/2016	Account Number
Registered User	Mrs Mwanza Ntuli	122-230-1671

Street Address	39 Lotus Street Brackenhurst Alberton
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Meter Reading				
Date Read	Meter no	Previous Reading	Current Reading	Consumption
12/04/2016	M 6424	3 415 kl	A	24,15 kl

Account Details	
Details	Amount Due
Water	B
VAT (14%)	C
TOTAL DUE	D

Current consumer final payment date 15/03/2007. Accounts in arrears after the 15 th will be liable for disconnection.

Water Usage Summary	
Date	Meter Reading
March2016	1 715 kl
February2016	1 707 kl
January2016	1 699 kl

Tariff Structure	
Kilolitre	Tariff
≤ 6 kl	Free
6,1 – 15 kl	R6,94
15,1 – 25 kl	R7,53
> 25 kl	R9,91

- 1.1) The reading on Mrs Jones's water meter last month was 1 715 kl and her consumption for this month was 23,15 kl. Calculate the "Current Reading" (Cell A) (2)

- 1.2) Use the Tariff Structure table provided at the bottom of the bill to calculate the "Amount Due" by Mrs Jones for water. (Cell B) (3)

- 1.3) Calculate and fill in the VAT (value added tax) Mrs Ntuli will have to pay.(Cell C) (3)

- 1.4) If the Total Due is calculated by adding the amount due and the VAT, calculate and fill in the "Total Due" (Cell D) (2)

Question 2

The picture below shows a quotation for electrical appliances from Bosch Appliances.

BOSCH APPLIANCES				
4 Hennie Alberts Drive New Redruth, 5172 Tel: (011) 216 8194			QUOTATION No: 5178-NGO Date 02-05-2015	
Attention: Mr P Benoni			Tel: 021 562 7188	
Description	Quantity	Unit Price (excl VAT)	Total (excl VAT)	VAT
Power- Amm Drill Press	1	R 2 745.18	R 2 745.18	(a)
Husquavana Band Saw	2	(b)	R 1 894.74	R 265.26
			Total due	(c)
This quotation is valid for 14 days after date of issue				

- 2.1) Calculate the value of (a) in the above table. Show all working (2)
- 2.2.1) Calculate the value of (b) on the above quotation. Show all working. (2)
- 2.2.2) Show how the VAT amount of R265.26 for the Band Saw was calculated (3)
- 2.3) Calculate the total due for all three items (c). (3)

[10]

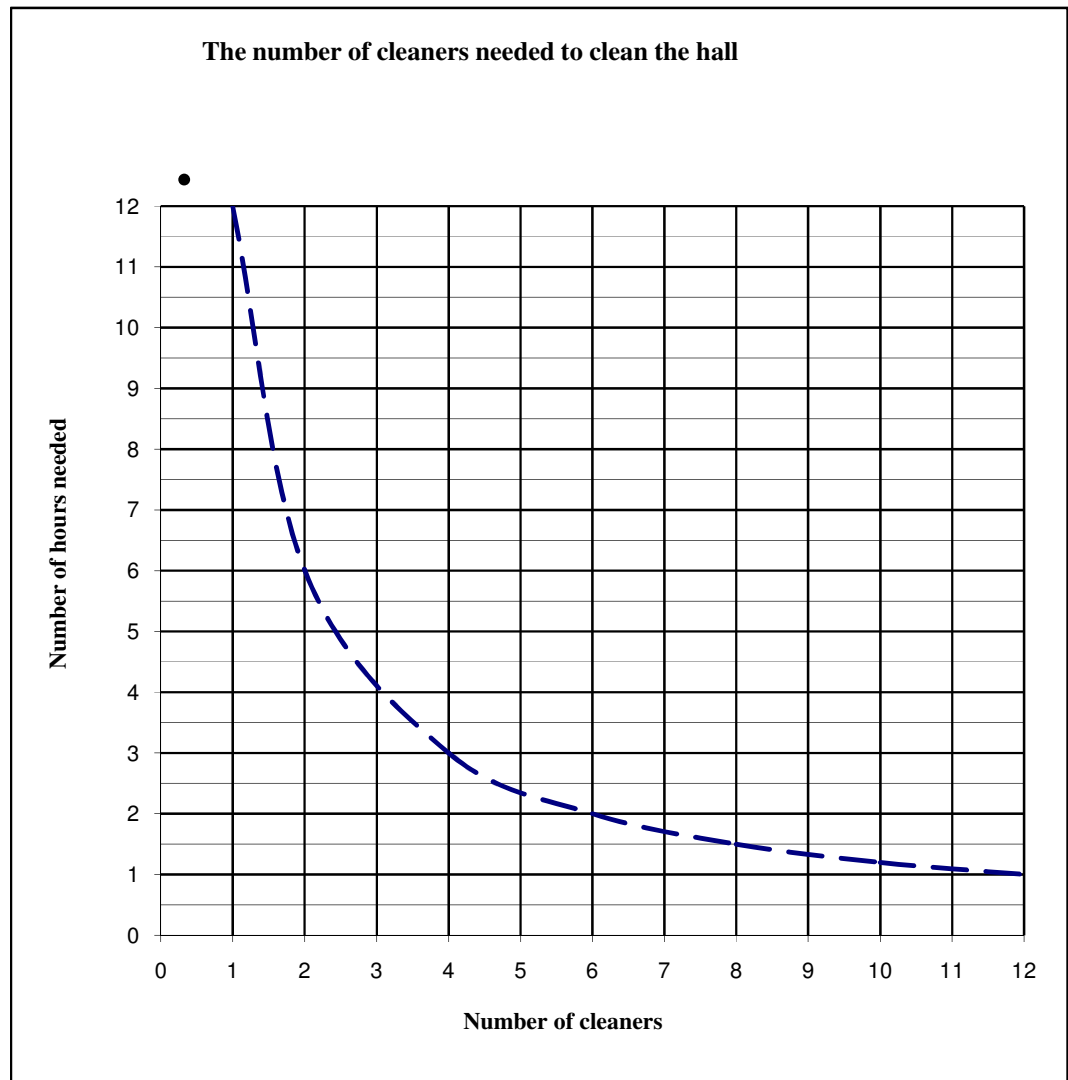
QUESTION 3

SUPERCLEAN is a company which runs a cleaning service. They are hired to clean a banquet hall. The number of employees sent to clean the hall is dependent on the time between functions. If there is more than one function on a particular day, the hall may need to be cleaned in 1 hour. The table below shows the number of cleaners and the number of hours it takes to clean the hall.

Number of cleaners	1	2	4	E	12
Number of hours needed to clean the hall	12	D	3	2	1

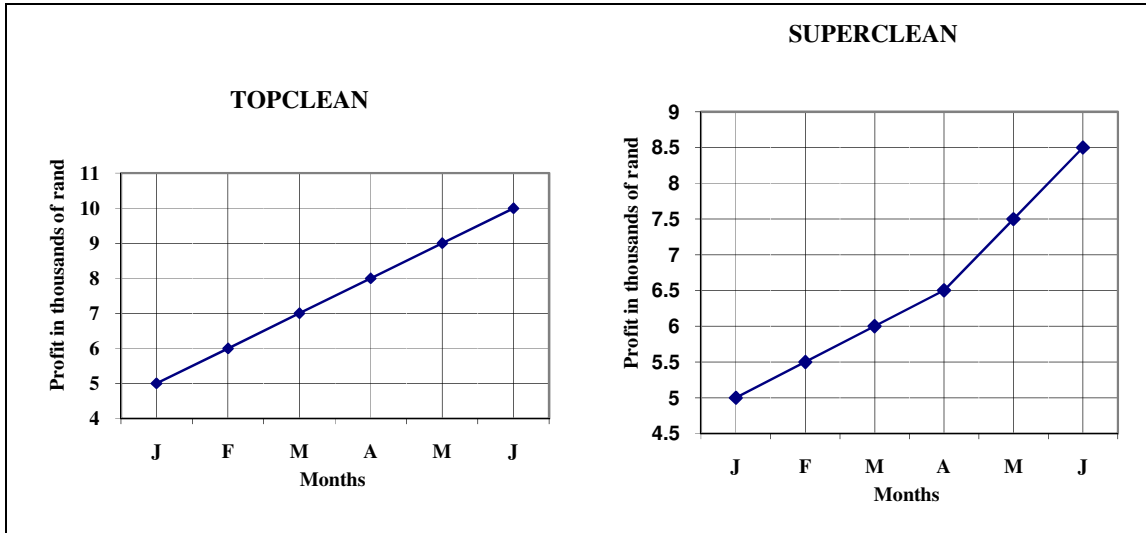
- 3.1.1 Calculate the value of D and E using the information given in the table. (4)

3.1.2 The graph below illustrates the above-mentioned information.



- (a) Explain why the graph is represented as a dotted line. (2)
- (b) Use the graph to determine approximately how long it would take five cleaners to clean the hall. (2)
- (c) How many hours would it take 24 cleaners to clean the hall? (2)
- (d) What type of proportion does this graph represent? (2)

3.2 John and Andile are the managing directors of TOPCLEAN and SUPERCLEAN respectively. The two are constantly arguing about which one of the two companies yields a higher profit. The graphs below show the profits of the two companies.



Use the graphs to answer the following questions:

- 3.2.1 Which company appears to be earning a higher profit?
Give a reason for your answer. (2)
- 3.2.2 John says that the graphs are misleading. Andile says that they are not misleading.
- (a) Calculate the difference in profit for SUPERCLEAN between January and April. (2)
- (b) Calculate the difference in profit for TOPCLEAN between January and April. (2)
- (c) Which managing director is correct? Give a reason for your answer. (1)
- (d) How would you change the graphs to support your argument?
- 3.2.3 Calculate the total profit made by TOPCLEAN from January to June. (2)

Question 4

Daniella sells decorated candles for extra income. Her monthly fixed expenses include the following: Rent R510; Packaging R110; Transport R500; Advertising R75.

Her variable expenses are R5.50 per candle.

She marks her products up by 70 % for resale.

4.1) Calculate the selling price of each decorated candle. (3)

4.2) Calculate Daniela's total fixed expenses for each month? (2)

4.3) Complete the following table on the annexure provided. Detach the page and include it in your answer booklet: (10)

Number of packages sold	200	400	600	800
Fixed Expenses	XXXXX	XXXXX	XXXXX	XXXXX
Variable Expenses	XXXXX	XXXXX	XXXXX	XXXXX
Total Cost of Production	XXXXX	XXXXX	XXXXX	XXXXX
Income	XXXXX	XXXXX	XXXXX	XXXXX
Profit	XXXXX	XXXXX	XXXXX	XXXXX

4.4) Construct a clearly labeled graph Comparing Income and Total cost of production. Answer this question on the attached annexure. Detach the page and include it in your answer booklet: (7)

4.5) Mark the break- even point with the letter X. (1)

3.2 The company is hired to transport a load from Durban to Kokstad. The two common routes are from Durban to Kokstad via Port Shepstone or from Durban to Kokstad via Pietermaritzburg. Use the distance table to determine the following:

- 3.2.1 The distance from Durban to Kokstad via Pietermaritzburg (2)
- 3.2.2 The distance from Durban to Kokstad via Port Shepstone (2)
- 3.2.3 Which route is indicated on the distance table as the distance between Durban and Kokstad? (1)

3.3 The following table lists the income and expenses for Fatima's Transport Company for January 2006. Running costs include rental for the business premises, telephone, electricity and water.

INCOME		EXPENSES	
Payment received from customers	R682 500,00	Running costs	R325 400,00
		Salaries	R100 000,00
		Petrol	R50 000,00

- 3.3.1 Calculate the profit made by the transport company for January. (3)
- 3.3.2 The profit of the company for February was 10,5% more than the profit for January.
 - (a) If the expenses of the transport company for February were unchanged, determine the income for February. (5)
 - (b) Calculate the profit margin for February. (3)

Use the formula:
$$\text{Profit Margin} = \frac{\text{Income} - \text{Expenses}}{\text{Expenses}} \times 100\%$$

3.4 The rate to transport goods from Durban to Howick is R1 500 per load.

- 3.4.1 Write down the equation that expresses the income (I) in terms of the number of loads as follows: (2)

$$I = n \times \dots\dots\dots \quad (\text{where } n = \text{number of loads})$$

3.4.2 The following formula is used to calculate the expenses (E) for the cost per load between Durban and Howick:

Expenses(E) = Cost of diesel \times number of loads + maintenance and salary
 Or $E = 750 \times n + 3\,500$

The table below represents the income and expenses for transporting different numbers of loads between Durban and Howick.

Number of loads per month	0	1	2	3	4	5	6
Expenses (E)	R3 500	R4 250	R5 000	R5 750	R6 500	R7 250	R8 000
Income (I)	0	R1 500	R3 000	R4 500	R6 000	R7 500	R9 000

Use the table to draw TWO line graphs on the set of axes provided on the diagram sheet. Clearly label each line graph. (5)

3.4.3 Use the graphs to answer the following questions:

- (a) What is the approximate amount in rand at the break-even point? (2)
- (b) Determine the profit made if the company transports SIX loads between Durban and Howick. (2)

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Annexure Page 1

Name: _____

Class: _____

Teacher: _____

Question 4.3

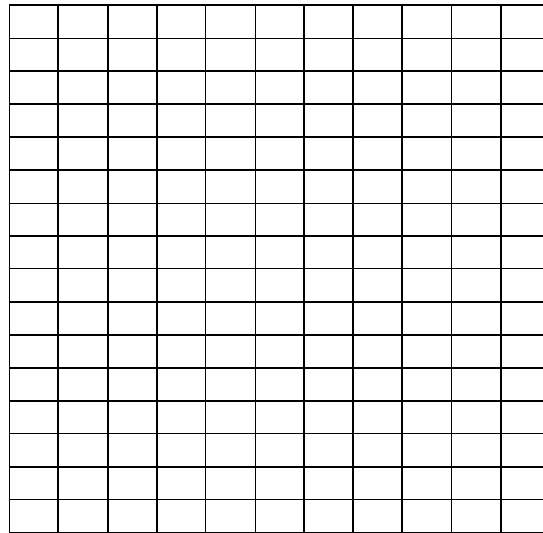
Number of packages sold	200	400	600	800
Fixed Expenses				
Variable Expenses				
Total Cost of Production				
Income				
Profit				

(10)

Question 4.4

Heading: _____

Label: _____



0 200 400 600 800

Number of packages sold

(7)

