

**NATIONAL
SENIOR CERTIFICATE**

GRADE 10

**MATHEMATICAL LITERACY P1
NOVEMBER 2015**

MARKS: 75

TIME: 1 ½ Hours


This paper consist of 10 pages including an ANNEXURE

INSTRUCTIONS AND INFORMATION

1. This question paper consists of FIVE questions. Answer ALL the questions
2. Use Annexure A to answer question 5.3.
3. Number the answers exactly as they are numbered in the question paper.
4. Start EACH question on a NEW page or underline at the end of each question.
5. You may use an approved calculator (non-programmable and non-graphical), unless stated otherwise.
6. Number the answers correctly according to the numbering system used in this question paper
7. All calculations must be clearly shown.
8. ALL final answers must be rounded off to TWO decimal places, unless stated otherwise.
9. Indicate units of measurement, where applicable.
10. Write neatly and legibly.

QUESTION 1

- 1.1. Mr Gcina Dlamini works as a panel beater at Complete Smash Repair shop. Study his salary slip carefully and use it to answer the questions that follow.

	<p>Employee name: G. Dlamini Identity number : 8402165381088 Marital status: Single</p> <p>Bank Account Number: 4068350889 Tax Reference number: 145744589</p> <p>Pay slip No.: 24 Pay date: 22 April 2014</p>
Earnings	Deductions
<p>Basic salary : R15 000.00 Housing subsidy.: R..... (a).....</p>	<p>Tax : R2 578.25 U.I.F. : R165.00 Med. Aid : R900.00 Pension : R1 125.00</p>
<p>Gross salary: R16 500.75</p>	<p>Deductions: R..... (b)..... Net pay : R.....(c).....</p>

- 1.1.1. On which date did Gcina receive his salary and what is his Tax Reference number? (2)
- 1.1.2. Calculate Gcina's : (2)
- (a) Housing subsidy (2)
- (b) Total deductions (2)
- (c) Net pay (2)
- 1.1.3. If Gcina's basic salary was increased by 5,8%, what would his new gross salary be? (3)
- 1.2. For a specific month a household had to pay a basic amount of R105, 00, plus R908, 75 for the consumption of 1200KwH (kilowatt-hour) electricity, excluding VAT.
- 1.2.1. Determine the tariff for electricity consumption, excluding VAT. (2)
- 1.2.2. The family went on a holiday for 30 days leaving the freezer switched on. The freezer consumes 18kwh per day. Calculate the amount payable for electricity for that month, including the basic amount and VAT. (4)

[17]

QUESTION 2

The city of Cape Town is cold in winter. Below is view of Cape Town and a 7 day forecast.



7 Day Expanded Forecast					
Day			High Temp	Low Temp	Wind/Dir
Fri		More sun than clouds. Cool.	15°C	12°C	20km/h W
Sat		Scattered clouds. Cool.	15°C	11°C	34km/h SE
Sun		Sunny. Mild.	18°C	11°C	40km/h E
Mon		Sunny. Mild.	18°C	12°C	13km/h W
Tue		Sunny. Mild.	17°C	12°C	23km/h SE
Wed		Sunny. Mild.	18°C	7°C	15km/h SW
Thu		Sunny. Mild.	18°C	8°C	16km/h W

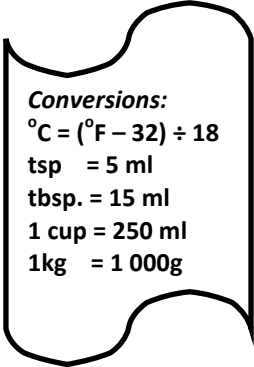
The questions that follow are based on the minimum or low temperatures of the 7 day expanded forecast.

- 2.1. What is the range of the temperatures? (2)
- 2.2. Find the:
 - 2.2.1. Mode (2)

- 2.2.2. Median (2)
- 2.2.3. Mean of the temperatures (3)
- 2.3. In how many days was the temperature less than the mean temperature? (2)
- 2.4. What is the probability that in the seven days the temperature was 9°C ? Write your answer as a percentage and common fraction. (4)

QUESTION 3

3.1

<i>Cheerful Chocolate Cake</i>	
<p>Ingredients:</p> <p>150g flour</p> <p>$\frac{3}{4}$ cup sugar</p> <p>2 tsp. baking powder</p> <p>3 eggs</p> <p>$\frac{1}{8}$ tsp. salt</p> <p>2 level tbsp. cocoa</p> <p>$\frac{1}{2}$ cup water</p> <p>1 tbsp. butter</p>	 <p>Conversions:</p> <p>$^{\circ}\text{C} = (^{\circ}\text{F} - 32) \div 18$</p> <p>tsp = 5 ml</p> <p>tbsp. = 15 ml</p> <p>1 cup = 250 ml</p> <p>1kg = 1 000g</p>
<p>Baked in a moderately hot oven, between 385°F and 400°F for 45 minutes</p>	
<p>Icing for the cake</p> <p>Ingredients:</p> <p>3 cups icing sugar</p> <p>4 tbsp. butter</p> <p>$\frac{1}{8}$ tsp. salt</p> <p>2 tbsp. hot water</p> <p>1 tsp. vanilla essence</p> <p>3 tbsp. cocoa.</p>	

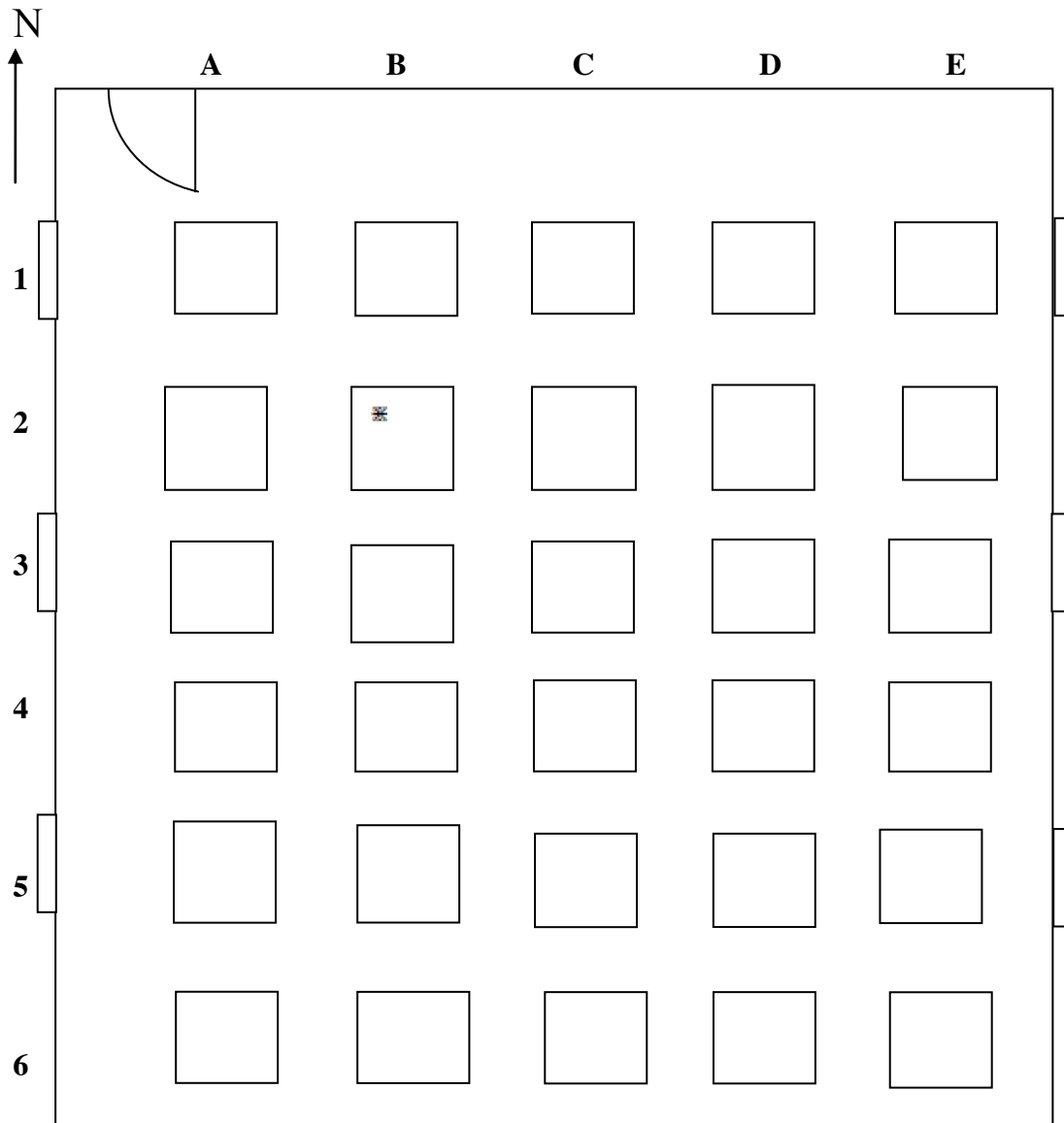
NB: This recipe will serve six (6) people.

- 3.1.1. How many people can be served with the cake? (2)
- 3.1.2. Determine the quantity of sugar needed for the cake only in milliliters. (2)
- 3.1.3. How much butter is needed in total? Convert answer in milliliters? (2)
- 3.2. Grace's car uses 9.5ℓ of petrol per 100km.
- 3.2.1. Determine the rate in km/ℓ (2)
- 3.2.2. How far can the car travel with 47.5ℓ petrol? (2)
- 3.2.3. How many litres of petrol do they need to travel 350km? (2)

[12]

QUESTION 4

Below is a sitting plan for final examination in single classroom at Mahlatsi High School.
The seats are numbered as shown on the diagram.



SCALE: 1:500

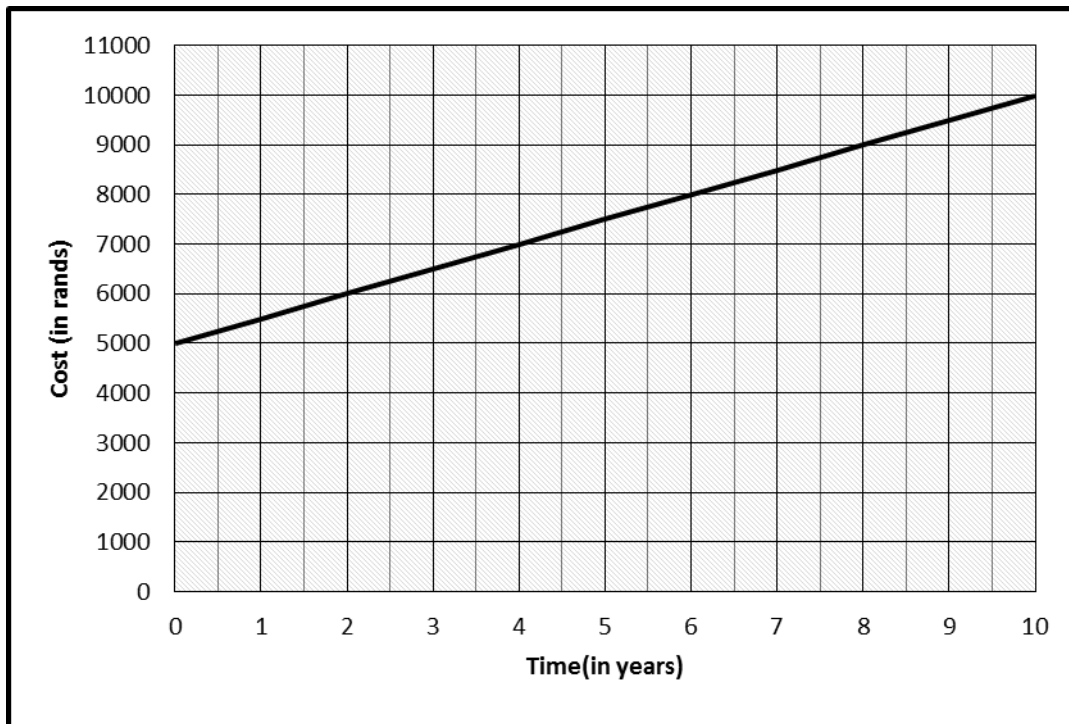
- 4.1. How many learners can be accommodated in the classroom? (2)
- 4.2. Which sit is indicated by asterisk (*)? (2)
- 4.3. In which general direction is seat E6 from entrance? (2)
- 4.4. If the northern wall is 15cm what is the actual length of the wall in metres? (3)
- 4.5. The western wall is 6m. Calculate the area of the classroom. Use the formula (3)

$$\text{Area} = \text{length} \times \text{breadth}$$

[12]

QUESTION 5

- 5.1. The graph below shows the amount of money accumulated when a certain amount of money is invested over a period of time.



- 5.1.1. What was the original value of this investment? (2)
- 5.1.2. What is the value of the investment after 9 years? (2)
- 5.1.3. Calculate the interest after 9 years. (2)
- 5.1.4. Calculate the simple interest rate per annum. (2)
- 5.2. Mawaza is a street vendor. He bought 75kg mangoes at R3, 15/kg and sold it all for R5, 75/kg. Determine the profit or loss he might have made. (3)

- 5.3. A survey was conducted using the top 100 MP3. The length of the running time, in minutes, of each compact disc is recorded in the table.

Length of running time in minutes (T)	Number of MP3 albums
$30 \leq t < 39,9$	1
$40 \leq t < 49,9$	4
$50 \leq t < 59,9$	28
$60 \leq t < 69,9$	43
$70 \leq t < 79,9$	19
$80 \leq t < 90$	5

Display this data in a histogram. (4)

- 5.4 Ben works part time at SUPER SPAR, he earns R15.00/h.

5.4.1. If he works for 20hrs how much will he earn? (2)

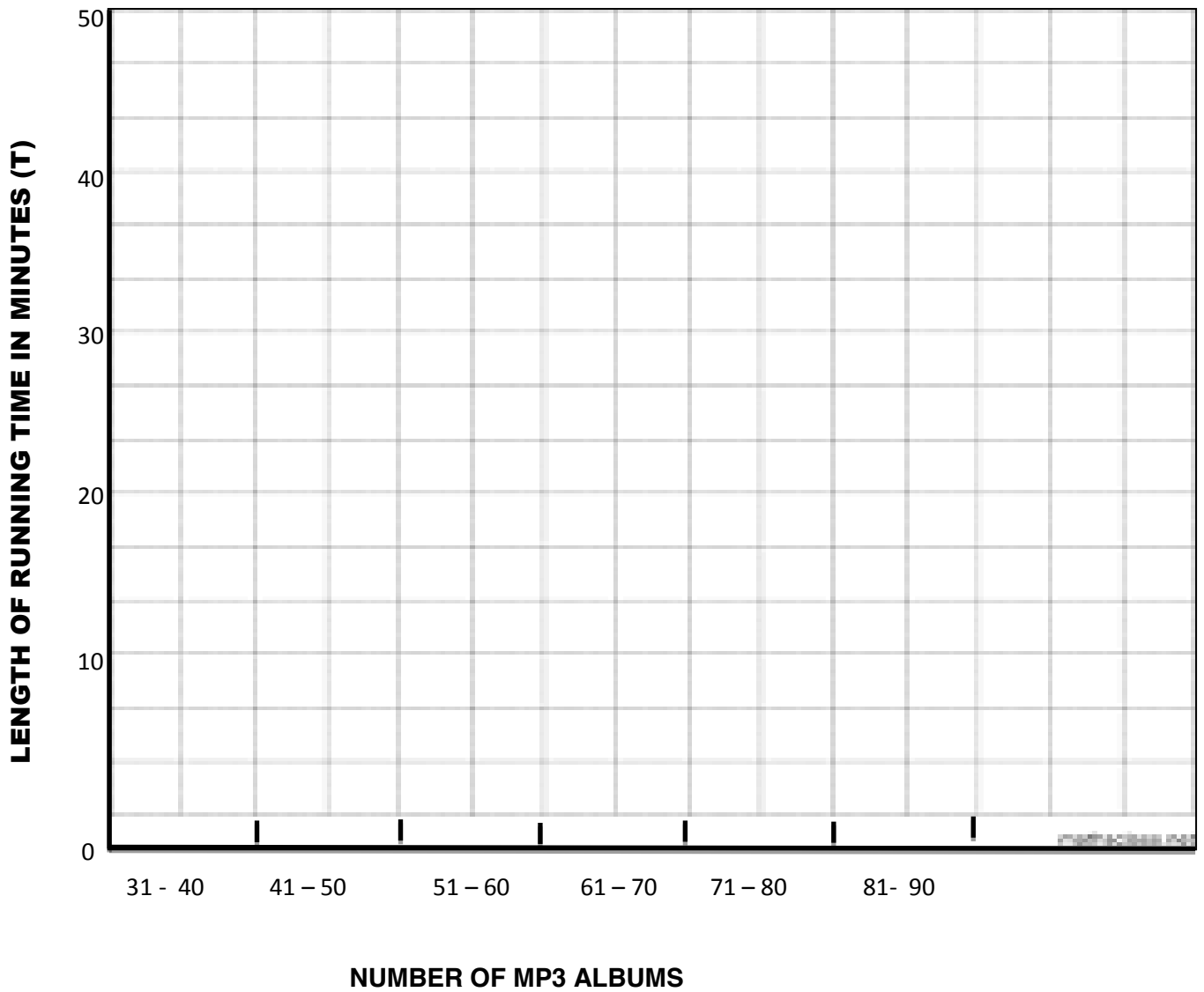
5.4.2. He would like to buy a bicycle of R750. How many hours should he work to earn R750.00? (2)

[19]

GRAND TOTAL = 75

ANNEXURE A: QUESTION 5.3.

NAME: _____ **GRADE:** _____



NATIONAL SENIOR CERTIFICATE

GRADE 10

MATHEMATICAL LITERACY P1

2015 FINAL EXAMINATION MEMORANDUM

MARKS: 75

Symbol	Explanation
M	Method
MA	Method with Accuracy
CA	Consistent Accuracy
A	Accuracy
C	Conversion
S	Simplification
RT/RG	Reading from a Table / Reading from a Graph
SF	Correct substitution in formula
O	Opinion / Example
P	Penalty e.g. for no units, incorrect rounding off etc
R	Rounding Off

QUESTION 1		17MARKS		
Ques.	Solution	Explanation		Level
1.1.1.	22 April 2014 ✓ ,Tax ref: 145744589 ✓	2RT	2	TL1
1.1.2. (a)	16 500.75 - R15 000.00 ✓ = R1 500.75 ✓	1M 1A	2	TL1
(b)	R2578.25 + R900.00 + R1125.00 ✓ = R4768.25 ✓	1M 1A	2	TL1
(c)	R16500.75 – R4768.25 ✓ = R11732.50 ✓	1CA 1CA	2	TL1
1.1.3	✓ $R15\,000.00 \times \frac{105.8}{100} + R1500.75$ ✓ = R17 370.75 ✓	1M 1CA	3	TL2
1.2.1.	$\frac{908.75}{1200kWH}$ ✓ = R0.7573/kwh ✓	1M 1A	2	TL1
1.2.2.	R105 + 30 × 18 × R0.7573 ✓ = R105 + R408.94 = R513.94 ✓ ∴ R513 × 1.14 ✓ = R583.89 ✓	1M(consider 1.2.1) 1CA 1CA 1CA	4	TL3

QUESTION 2		15 MARKS		
Ques.	Solution	Explanation		Level
2.1.	Range = 12 °C – 7 °C ✓ = 5 °C ✓	1M 1A	2	TL2
2.2.1.	Mode = 11°C ✓✓	2MA	2	TL1
2.2.2.	7; 8; 11; 11; 12; 12; 12 ✓ Median=11 ✓	1MA 1CA	2	TL2
2.2.3.	Mean = $\frac{7+8+11+11+12+12+12}{7}$ ✓✓ = $\frac{73}{7}$	2M		TL2

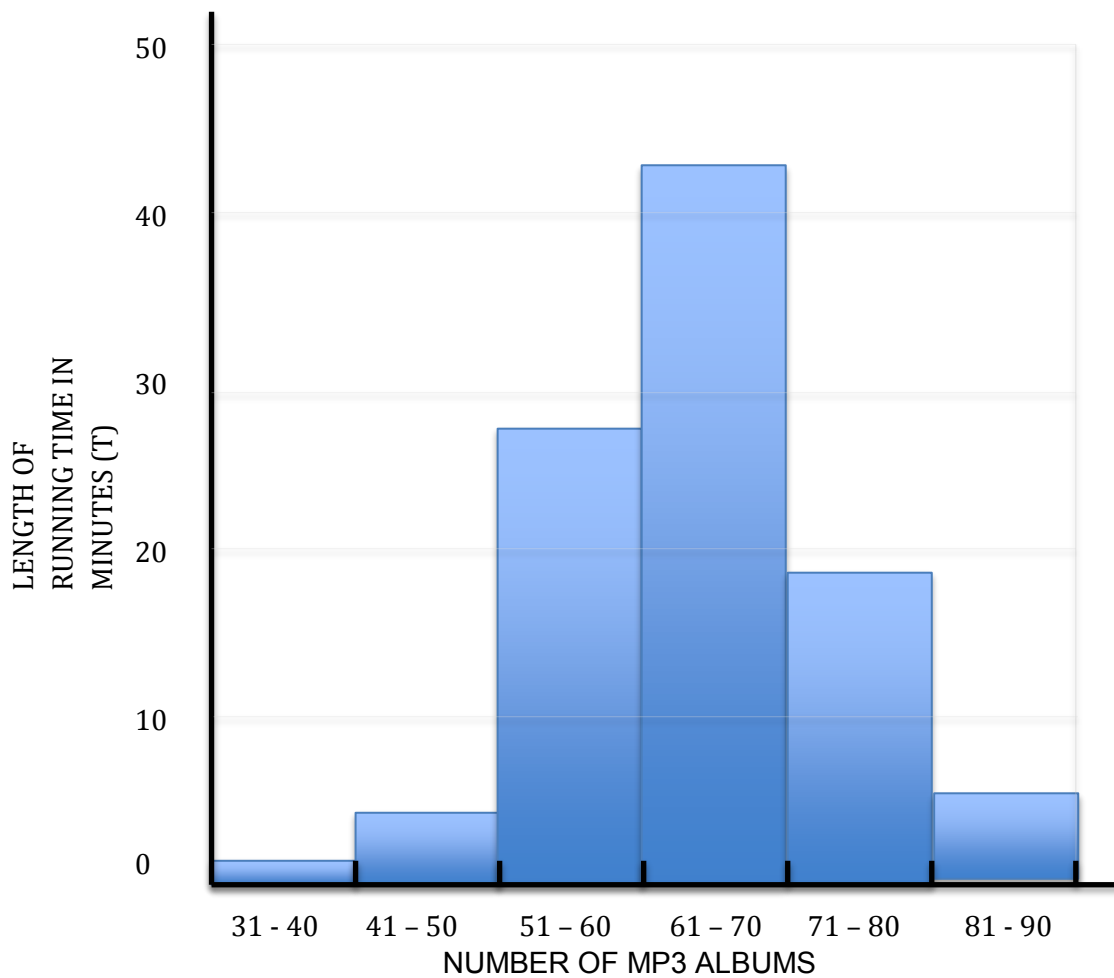
	= 10.43 °C ✓	1CA	3	
2.3	2days✓✓	2A	2	TL1
2.4	$P = \frac{2}{7}$ ✓✓ = 28.57 % ✓✓	2A 1CA	4	TL2

QUESTION 3		12 MARKS		
Ques.	Solution	Explanation	Level	
3.1.1	6 people ✓✓	2A	2	TL1
3.1.2.	$\frac{3}{4} \times 250$ ✓ = 187.5 ml ✓	1M 1A	2	TL1
3.1.3.	1 + 4 = 5 tbsp = 5 × 15 ml ✓ = 75 ml ✓	1 M 1CA	2	TL1
3.2.1	$\frac{100km}{9,5 l}$ ✓ = 10,53 km/l ✓	1M 1A	2	TL2
3.2.2	10,53 km/l × 47,5 = 500 km✓	1M 1A	2	TL1
3.2 .3	$\frac{350km}{10.5km / l} = 33.24l$	1M 1A	2	TL1

QUESTION 4		12 MARKS		
Ques.	Solution	Explanation	Level	
4.1.	30 learners ✓✓	2A	2	TL1
4.2	B2 ✓✓	2A (accept 2B)	2	TL1
4.3.	South East ✓✓	2A	2	TL1

4.4	$\begin{aligned}\text{Length} &= 15 \text{ cm} \times 500 \checkmark \\ &= 7500 \text{ cm} \checkmark \\ &= \frac{7500}{100} \\ &= 7.5 \text{ m} \checkmark\end{aligned}$	1M 1A 1C	3	TL2
4.5.	$\begin{aligned}\text{Area} &= 6 \times 7.5 \checkmark\checkmark \\ &= 45 \text{ m}^2 \checkmark\end{aligned}$	2MA 1CA	3	TL2

QUESTION 5		19 MARKS		
Ques.	Solution	Explanation		Level
5.1.1	R5000 $\checkmark\checkmark$	2RG	2	TL1
5.1.2	R9500 $\checkmark\checkmark$	2RG	2	TL1
5.1.3	$\begin{aligned}\text{R9500} - \text{R5000} &\checkmark \\ = \text{R4500} &\checkmark\end{aligned}$	1M 1CA	2	TL1
5.1.4	$\begin{aligned}\frac{500}{5000} \times 100\% &\checkmark \\ = 10\% &\checkmark\end{aligned}$	1M 1CA	2	TL2
5.2	$\begin{aligned}\text{Profit} &= \text{R}5.75 \times 75 - \text{R}3.15 \times 75 \checkmark \\ &= \text{R}431.25 - \text{R}236.25 \checkmark \\ &= \text{R}195.00 \checkmark\end{aligned}$	1M 2CA	3	TL2
5.3.1	See ANNEXURE	4		TL2
5.4.1	$\begin{aligned}\text{R}15 \times 20 &\checkmark \\ = \text{R}300 &\checkmark\end{aligned}$	1M 1A	2	TL1
5.4.2	$\begin{aligned}\text{R}750 \div \text{R}15 &\checkmark \\ = 50 \text{ hours} &\checkmark\end{aligned}$	1M 1A	2	TL1

ANNEXURE 5.3

1 Mark for each two correct bars

1 Mark for tight bars or no space between the bars

QUESTION NO	LEVELS			
	1-(60%)	2-(35%)	3-(5%)	TOTAL
QUESTION 1				
1.1.1	2			2
1.1.2 a	2			2
b	2			2
c	2			2
1.1.3		3		3
1.2.1	2			2
1.2.2			4	4
				17
QUESTION 2				
2				
2.1		2		2
2.2.1	2			2
2.2.2		2		2
2.2.3		3		3
2.3.	2			2
2.4		4		4
				15
QUESTION 3				
3.1.1	2			2
3.1.2	2			2
3.1.3	2			2

3..2.1	2			2
3..2.2	2			2
3.2.3	2			2
				12
QUESTION 4				
4				
4.1	2			2
4.2	2			2
4.3	2			2
4.4		3		3
4.5		3		3
				12
QUESTION 5				
5.1.1	2			2
5.1.2	2			2
5.1.3		2		2
5.1.4		2		2
5.2		3		3
5.3.1		4		4
5.4.1	2			2
5.4.2	2			2
				19
TOTAL	40	31	4	75