

VHEMBE EAST DISTRICT

GRADE 11

**NATIONAL
SENIOR CERTIFICATE**

**MATHEMATICAL LITERACY
TERM 3
CONTROL TEST
09/09/2024**

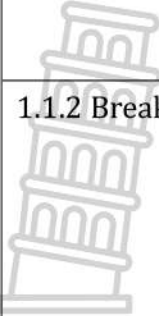


INSTRUCTIONS AND INFORMATION

Read the following instructions carefully before answering the questions.

1. This question paper consists of **5** questions.
2. Answer **ALL** the questions.
3. Write neatly and legibly.
4. This question paper has **9** pages

Question 1 [38 Marks] 1.1 Match each term in Column A with its correct definition in Column B. Write the letter of the correct answer next to each number in Column A. (10)

Column A	Column B
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<p>1.1.1 Elevation Plan</p> 	<p>A. The rate at which the general level of prices for goods and services rises, eroding purchasing power.</p>
<p>1.1.2 Break-even point</p>	<p>B. The financial gain realized when the revenue generated from business activities exceeds the expenses, costs, and taxes involved in sustaining those activities</p>
<p>1.1.3 Profit</p>	<p>C. It refers to the money an individual or business receives in exchange for labour, products, services, or investments.</p>
<p>1.1.4 Inflations</p> 	<p>D. The point at which total revenues equal total costs, meaning that a business or project is neither making a profit nor a loss</p>
<p>1.1.5 Income</p> 	<p>E. A technical drawing that shows the exterior or interior sides of a building or structure.</p>
	<p>F. The cost of borrowing money, typically expressed as a percentage of the principal amount borrowed.</p>

1.2. Gavaza needs a new stove. She saw the following advertisement on a local store leaflet.



5- Burner gas/electric stove with auto ignition

Cash Payment Option

New selling price including VAT R10 999.00

Save R2000.00

Hire Purchase

20% deposit

R609.00 X 30 Months

Total cost excluding deposit R

[Adapted from bradlows.co.za]

Use the information above to answer the questions that follow.

1.2.5 Gavaza stated that if she buys the stove with the cash option, she will save more than one third of the total cost price including deposit of the hire purchase option.

1.2.1 What does the acronym VAT stand for (2)

1.2.2 Calculate the original price of the stove (2)

1.2.3 Calculate the VAT amount included in the new selling price (3)

1.2.4 Explain why the stove in the advertisement is shown as gas/electric (2)

Verify with calculations if her statement is valid or not. (8)

1.3

Budget	
Income	52000
• Salary	35000
• Commission	17000

Income and Expenditure Statement	
Income	45000
• Salary	33000
• Commission	12000

Expenditure	26492
• Rent	8000
• Car Repayment	7000
• Insurance	900
• Medical Aid	840
• Food	2392
• Water and Electricity	860
• Entertainment	1500
• Petrol	2000
• Savings	3000

Expenditure	37040
• Rent	8000
• Car Repayment	7000
• Insurance	900
• Medical Aid	840
• Food	2800
• Water and Electricity	700
• Entertainment	2000
• Petrol	1800
• Savings	3000
• Repairing Broken Car	10000

Use the Budget, Income and Expenditure Statements to answer the following questions

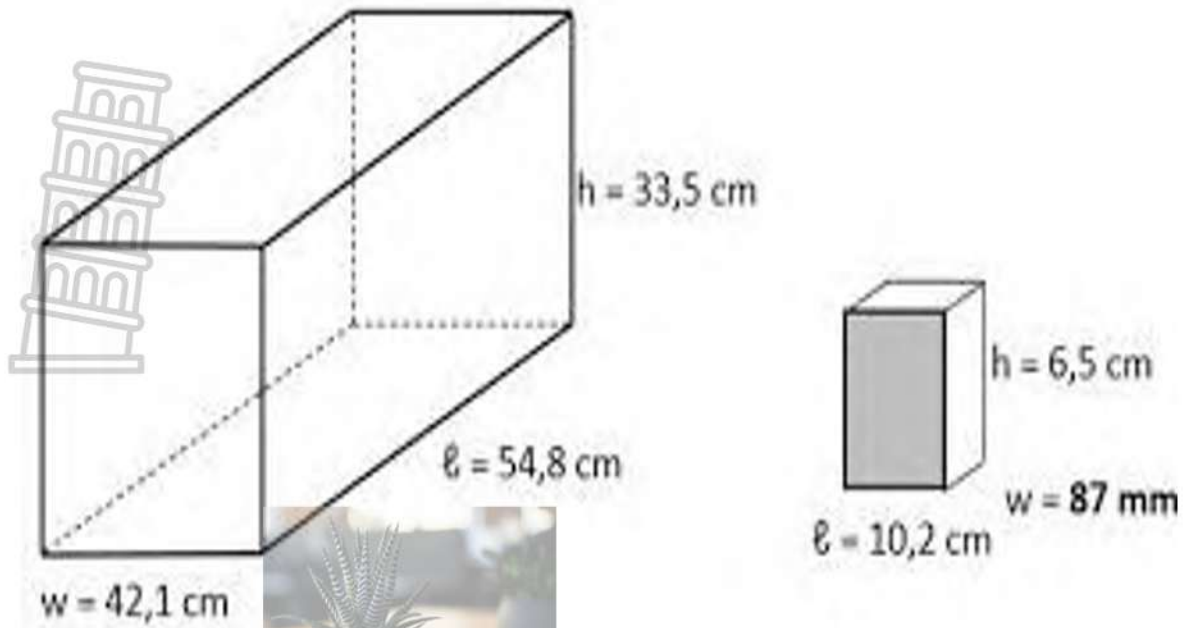
- 1.3.1 Determine the fixed costs and calculate their total. (5)
- 1.3.2 Which item under the Income and expenditure statement is occasional? (2)
- 1.3.3 Lufuno says that Variable costs excluding Medical Aid make no less than 12,98% of total budget income. Use your own calculation to show that he is correct. (4)

Question 2 [12 Marks]

- 2.1. Murengisi owns an ice-making company that sells 5 litre ice creams. He sells each 5 litre for R200 and it costs him R50.00 to make one 5 litre. The company has a fixed cost of R3 000 for rent every month.
 - 2.1.1. Draw a graph on **annexure A** to represent costs for the clothing company. Indicate costs, income and break-even point (06)
 - 2.1.2. How many 5litres must the company sell to start making a profit? (03)
 - 2.1.3. What will be the percentage profit that he would have made from the total income of 100 5Litres? (03)

Question 3 [15 Marks]

- 3.1. Below is a drawing of a container and a small box. The small box needs to be packed in the container. The sketches are not drawn to scale.

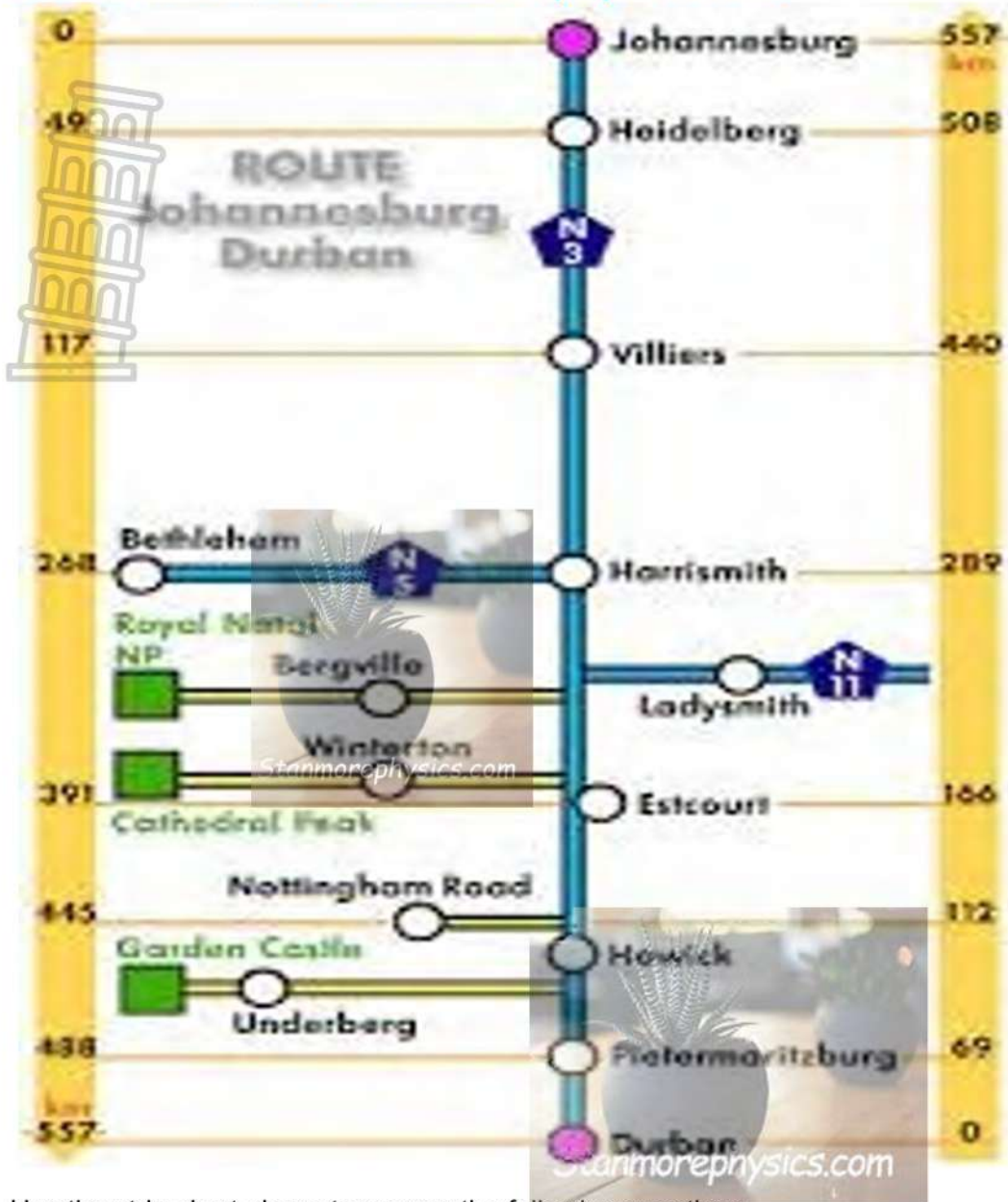


Use the given information to answer the following questions:

- 3.1.1. Calculate the area of the shaded rectangular side. (02)
- 3.1.2. Calculate the Volume of the small box Use the following formula:
Volume = length x width x height (03)
- 3.1.3. Calculate the number of small boxes that can be packed in the large container if the **length (l)** of the small box is packed along the **width (w)** and the **length (l)** of the container. (05)
- 3.1.4. Calculate the number of small boxes that can be packed in the large container if the **height (h)** of the small box is packed along the **width (w)** and the **height (h)** of the container. (05)

Question 4 [17 Marks]

- 4.1. The strip map shows the distance from Johannesburg to Durban. Suzan will be driving from Johannesburg to Pietermaritzburg.

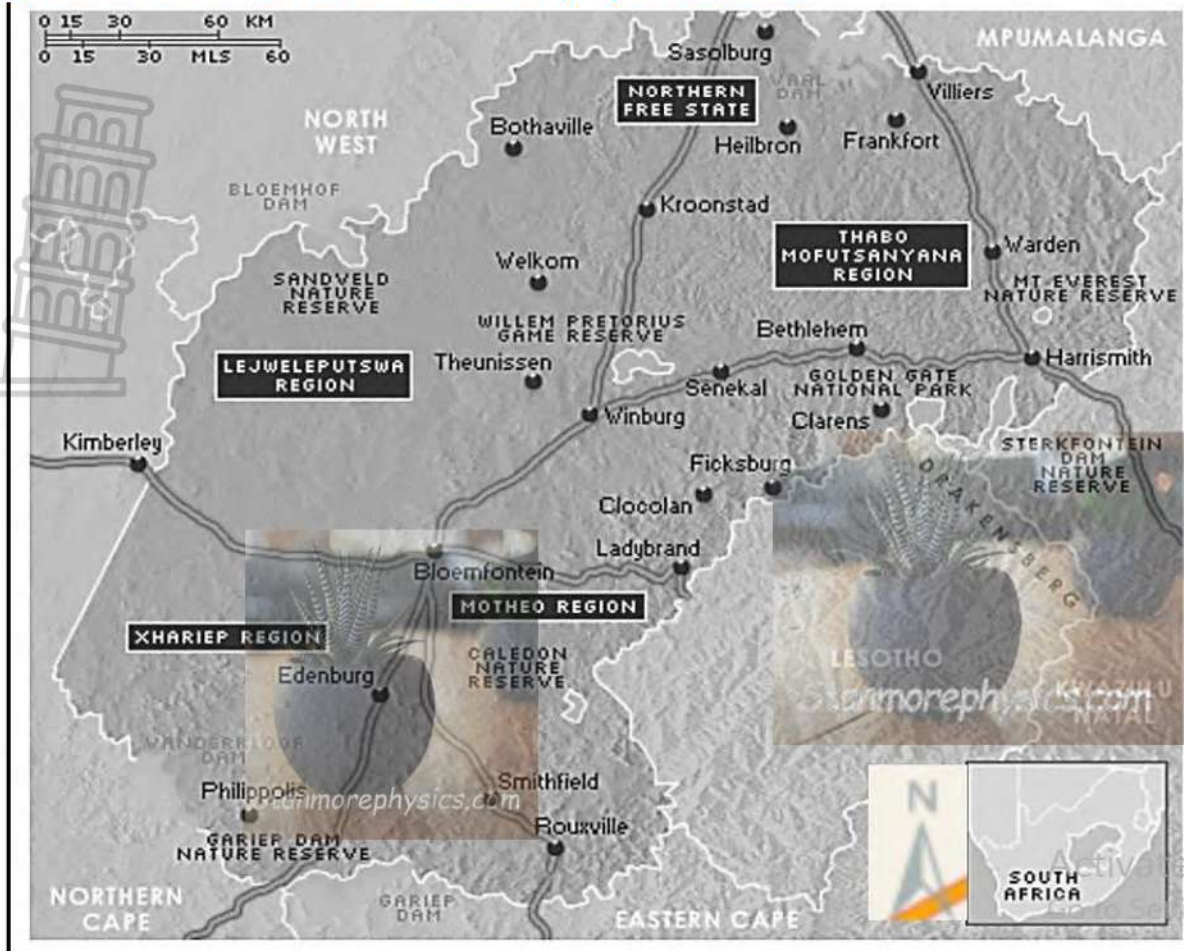


Use the strip chart above to answer the following questions.

- 4.1.1. Describe the route, including the distance, Suzan will follow. (03) 4.1.2.
Calculate the total return distance in 4.1.1 above. (02)
- 4.1.3. Mention other national roads on the above map (02)
- 4.1.4. What is the distance between Villiers and Harrismith? (02)
- 4.1.5. Suzan says the distance between Johannesburg and Escourt is shorter than the distance between Pietermaritzburg and Villiers. Show with calculations if she is correct or not. (06)
- 4.1.6. What is the probability of the town ending in letter **g** against all the towns in the map? Write your answer in decimal number correct to 1 number after the comma. (02)

QUESTION 5 [18]

Mukundi stays in Kimberly and She regularly travels to Bloemfontein to visit her parents. The Map below shows the location of the two places.



Use the information above to answer the questions that follows

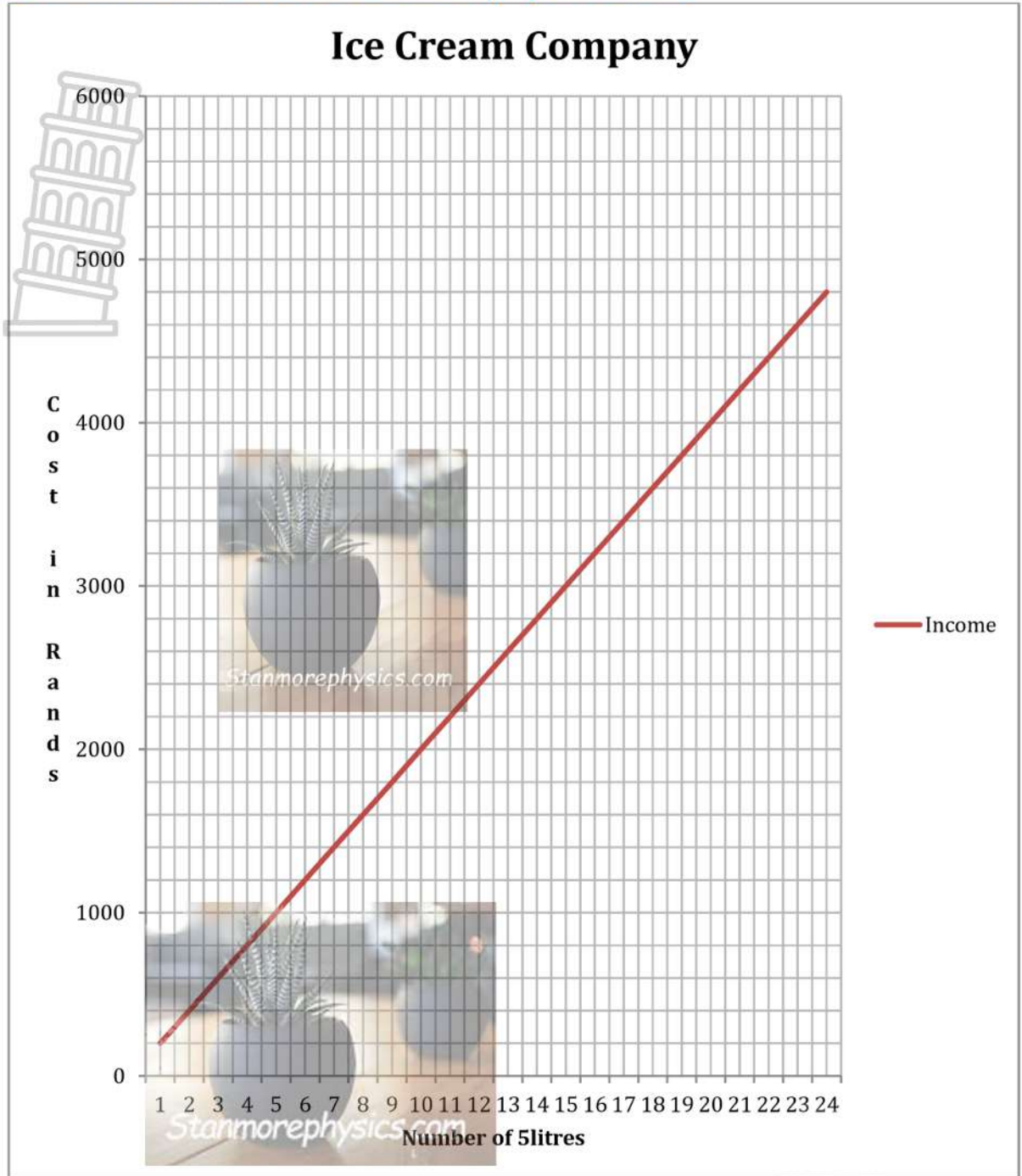
- 5.1. Give the general direction from Northern Cape to Bethlehem. (2)
- 5.2. Identify the type of the scale used and explain the meaning of the scale. (4)
- 5.3. Write down the number of nature reserves appearing on the map. (2)
- 5.4. The distance between Kimberly and Bloemfontein is 6,2cm, Use the bar scale to
 Calculate the actual distance. Round off your answer to the nearest whole number (5)
- 5.5. Mukundi uses 135 minutes to travel from Kimberly to Bloemfontein, Use the
 distance in 5.4 to calculate the average speed in which she is travelling
 You may use the following formula $\text{Distance} = \text{Average speed} \times \text{Time}$ (5)

TOTAL = [100]

ANNEXURE A

Name of learner:

Grade:





LIMPOPO

PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF
EDUCATION



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Stanmorephysics.com

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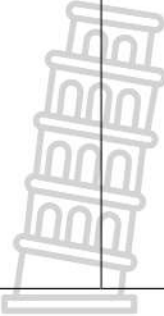
MARKING GUIDELINE


MARKS: 100

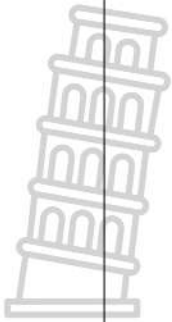
TIME: 2 HOURS

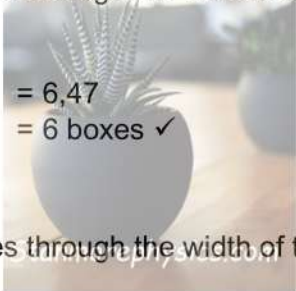
Q	SOLUTIONS	MARKS
	QUESTION 1 [31]	
1.1	1.1. E ✓✓ 1.2. D ✓✓ 1.3. B ✓✓ 1.4. A ✓✓ 1.5. C ✓✓	2 correct answers 2 correct answers 2 correct answers 2 correct answers 2 correct answers (10)
1.2.1	Value Added Tax ✓✓	2 correct answer
1.2.2	Original Selling Price = R10 999 + R 2000✓ = R12 999✓	1 for Adding 1 correct answer (2)
1.2.3	$\text{VAT amount} = \frac{15}{115} \times R10\,999$ $= R\,1\,434,65$ <p style="text-align: center;">OR</p> $\text{Price exclude VAT} = \frac{R10\,999}{1,15}$ <p style="text-align: center;">OR</p> $= \frac{100}{115} \times R10\,999$ $= R9\,564,35$ $\text{VAT amount} = R10\,999 - R9\,564,35$ $= R\,1\,434,65$	1 for dividing 1 multiplying by R10999 1 correct answer OR 1 For dividing 1 subtraction 1 correct answer (3)
1.2.4	The stove function on dual purpose of gas and electricity ✓✓	2 Explanation
1.3.1	Fixed costs = Rent✓, Car Repayment✓, Insurance✓ Total Costs = R8000 + R7000 + R900✓ = R15900 ✓	3 Marks for Fixed costs and 2 Marks for Total Costs (05)marks
1.3.2	Repairing Broken Car ✓✓	2 Marks

<p>1.3.3</p>	<p><i>Variable Costs</i></p> $= \frac{\text{Variable Costs}}{\text{Budget Income}} \times 100 \checkmark$ $= \frac{(R2392 + R860 + R1500 + R2000)}{R52000} \times 100 \checkmark$ $= 12,98\% \checkmark$ <p>Lufuno is correct ✓</p>	<p>1 Mark for application 1 Mark for substitution 1 Mark for answer 1 Mark for validation (4)</p>
<p>QUESTION 2 [12]</p>		
<p>2.1.1</p>	<p style="text-align: center;">Ice Cream Company</p>	<p>1 mark for starting point 1 mark for break-even point 1 mark for end point 1 mark for straight line 2 marks for labelling the axis (6)</p>
<p>2.1.2</p>	<p>Break-even point:</p> <p>Selling Price = Costs Price</p> $R200(\text{No. of 5Litres}) = R3000 + R50(\text{No. of 5Litres}) \checkmark$ $R150(\text{No. of 5Litres}) = R3000$ <p>Break-even point = 20 ✓</p> <p>To make a profit the company should sell 21 5Litres ✓</p>	<p>1 Mark for the formula 1 Mark for the answer 1 Mark for Profit</p>



<p>2.1.4</p> 	<p>Percentage Profit = $\frac{\text{Profit}}{\text{Income}} \times 100 \checkmark$</p> <p>$= R \frac{12000}{20000} \times 100 \checkmark$</p> <p>$= 60\% \checkmark$</p>	<p>1 Mark for formula 1 Mark for substitution 1 Mark for the answer (03)</p>
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QUESTION 3 [20]		
<p>3.1.1</p>	<p>$A = l \times h$</p> <p>$= 10,2\text{cm} \times 6,5\text{cm} \checkmark$</p> <p>$= 66,3 \text{ cm}^2 \checkmark$</p> 	<p>1 mark Substitution 1 mark for correct answer (2)</p>
<p>3.1.2</p>	<p>$V = l \times w \times h \checkmark$</p> <p>$= 10,2\text{cm} \times 8,7\text{cm} \times 6,5\text{cm} \checkmark$</p> <p>$= 576,81\text{cm}^3 \checkmark$</p>	<p>1 Correct formular 1 Substitution 1 Correct answer (3)</p>
<p>3.1.3</p>	<p>No of boxes through the width of the container = $\frac{42}{10,2\text{cm}} \checkmark$</p> <p>$= 4,12$</p> <p>$= 4 \text{ boxes} \checkmark$</p> <p>No of boxes through the width of the container = $\frac{54}{10,2\text{cm}} \checkmark$</p> <p>$= 5,3$</p> <p>$= 5 \text{ boxes}$</p> <p>No. of boxes = $4 \times 5 \checkmark$</p> <p>$= 20 \text{ boxes} \checkmark$</p>	<p>1 Division 1 Correct answer 1 dividing 54,8 1 multiplication 1 correct answer (05)</p>



<p>3.1.4</p>	<p>No of boxes through the width of the container = $\frac{42}{1.1}$ ✓</p> <p>= 6,47</p> <p>= 6 boxes ✓</p>  <p>No of boxes through the width of the container = $\frac{33}{6.5}$ ✓</p> <p>= 5,2,</p> <p>= 5 boxes</p> <p>No. of boxes = 6×5 ✓</p> <p>= 30 boxes ✓</p>	<p>1 Division 1 Correct answer 1 dividing 1 multiplication 1 correct answer</p> <p>(05)</p>

QUESTION 4 [18]		
4.		
4.1.1	<p>N3 ✓</p> <p>The distance = 488km</p> <p>Bar scale ✓✓</p>	<p>1 Marks for mentioning 2 Marks for answer with the correct unit (03)</p>
4.1.2	<p>= $2 \times 488\text{km}$</p> <p>= 976km ✓✓</p>	<p>2 Marks</p>
4.1.3	<p>N5; N11 ✓✓</p>	<p>2 Marks</p>

<p>4.1.4</p>	<p>= 440 – 289 = 151km ✓✓</p> <p style="text-align: center;">OR</p> <p>= 268 – 117 = 151km ✓✓</p>	<p>2 Marks</p>
<p>4.1.5</p>	<p>JHB to Escourt = 391km ✓✓</p> <p>Pietermaritzburg to Villiers = 440 – 69 = 371km ✓✓</p> <p>The statement is incorrect ✓✓</p> 	<p>2 Marks for distance from JHB and Escourt 2 Marks for distance between Pietermaritzburg 2 Marks for findings</p>
<p>4.1.6</p>	<p>= 4 ÷ 13 ✓</p> <p>= 0,3 ✓</p> 	<p>1 Mark for correct identification 1 Mark for the answer</p>
<p>5</p>		
<p>5.1</p>	<p>Northeast ✓✓</p>	<p>2A correct direction (2)</p>
<p>5.2</p>	<p>Bar Scale ✓✓ (2,2-2,4cm) on the paper represent 60km in reality ✓✓</p>	<p>2 marks for mentioning 2 marks for explaining (4)</p>
<p>5.3</p>	<p>5 ✓✓</p>	<p>2A correct answer (2)</p>
<p>5.4</p>	<p>2,3cm = 60km</p>	<p>1 for division</p>

	<p>1cm = ?</p> $\frac{60}{2,3} \checkmark$ $1\text{cm} = 26,08695652 \checkmark$ $6,2\text{cm} = 26,08695652 \times 6.2 \checkmark$ $= 161,7368\text{km} \checkmark$ $= 162\text{km} \checkmark$ <p>OR</p> $2,3\text{cm} = 60\text{km}$ $2,3\text{cm} = 60 \times 100\,000\text{cm} \checkmark$ $1\text{cm} = \frac{6000000}{2,3} \checkmark$ $= 2608695,652\text{cm}$ $= \frac{2608695,652\text{cm}}{100\,000\text{cm}}$ $= 26,08695652 \checkmark$ $6,2\text{cm} = 26,08695652 \times 6.2$ $= 26,08695652 \times 6.2 \checkmark$ $= 162 \text{ km} \checkmark$	<p>1 correct answer</p> <p>1 for multiplying</p> <p>1 correct answer</p> <p>1 Rounding</p> <p>1 for multiplying</p> <p>1 for division</p> <p>1 correct answer</p> <p>1 for multiplying by 6,2</p> <p>1 Rounding</p> <p>(5)</p>
5.5	$\text{Time} = \frac{135}{60}$ $= 2,25\text{hrs}$ <p>162km Average</p> $\text{Speed} = \frac{162\text{km}}{2,25\text{hrs}}$ $= 72\text{km/h}$	<p>1 dividing by 60</p> <p>1 CA substitution</p> <p>1 denominator</p> <p>1 correct answer</p> <p>(5)</p>

100 marks