STANMORE SECONDARY SCHOOL
GRADE : 11
MARKS: 100

MATHEMATICAL LITERACY
FIRST CONTROLLED TEST
TIME: 1½ hours

INSTRUCTIONS:

1. Write neatly and legibly.
2. Number your answers according to the question numbers.
3. Graph is to be drawn on the special graph paper provided.

QUESTION ONE

The Grade 11 learners are fundraising for their Market Day. They will be baking pies at school. The Home Economics department is charging them **R250** for the use of the kitchen. Ingredients will cost them **R9,75** per pie. The pies are **sold at R15,50 each**.

Table 1 below shows the number of pies versus cost.

Number of pies (n)	0	25	50	75	100	C	150	175	200
Cost in Rands (R)	A	493,75	737,50	B	1225	1517,50	1712,50	1956,25	2200

1.1.1   Write down the formula for the cost.   (2)
1.1.2.   Use the formula in 1.1.1. to calculate the missing values A,B and C. (6)

Table 2 below shows the number of pies versus the income.

Number of pies (n)	0	25	50	75	100	125	Y	175	200
Income in Rands (R)	0	387,50	775	X	1550	1937,50	2526,50	Z	3100

1.2.1.   Write down the formula for Income. (2)
1.2.2.   Calculate the missing values X,Y and Z. (6)
1.3.   Use Tables 1 and 2 to draw a clearly labelled graph of cost and income on the attached answer sheet and mark the break-even point with the letter P. (6)
1.4.   Define the term "break-even point" (2)
1.5.   What is the minimum number of pies that must be sold in order to break even? (2)
1.6.   The learners were told that if they sold 138 pies, they would make a profit of R543,50
       Verify , with calculations, whether this is true. (4)
       Note: **Profit = Income – Cost**   **[30]**

QUESTION TWO

Refer to the recipe for Choc-chip biscuits below.
Recipe makes 24 biscuits. Bake at 200°C for 20 minutes.

12 oz chocolate chips	12 oz plain flour	2 eggs
8 oz butter	8 oz castor sugar	1 teaspoon vanilla essence

2.1.   Convert the temperature to °F by using the formula below:
        °F = (°C x 1,8) + 32   (2)
2.2.   If Macey wants to make 72 choc chip biscuits, what must she multiply the recipe by to make the correct number of biscuits?   (2)
2.3.   How many eggs will be needed to make 72 biscuits?   (2)
2.4.   Write down the simplified ratio of butter to chocolate chips   (3)
2.5.   How many grams of flour are needed to make **48** biscuits? Round off your answer to 2 decimal places.   **1 oz = 28,3495 grams**   (5)
2.6.   If Macey sold 48 biscuits at R5 each and it cost R51,50 to make a batch of biscuits, how much profit did she make on the sale of the biscuits? (4)
                    Profit = Income - cost
2.7.   What is the cost price of making one biscuit? (2)
2.8.   Macey wants to cater for a party that starts at 7pm. She started baking at 6pm and needed to prepare the ingredients for 10 min, bake for 20 min, allow the biscuits to cool for 20 minutes and ice the biscuits for 15 minutes. Her transport will take a further 15 minutes to deliver the biscuits.
2.8.1.   Will the biscuits be delivered on time? Show all calculations.   (3)
2.8.2.   Write the starting time of the party in the 24 hour time format. (2)

                    [25]

QUESTION THREE

Alex is being told by family that he is overweight.
His weight is 95kg and his height is 1,75 m.

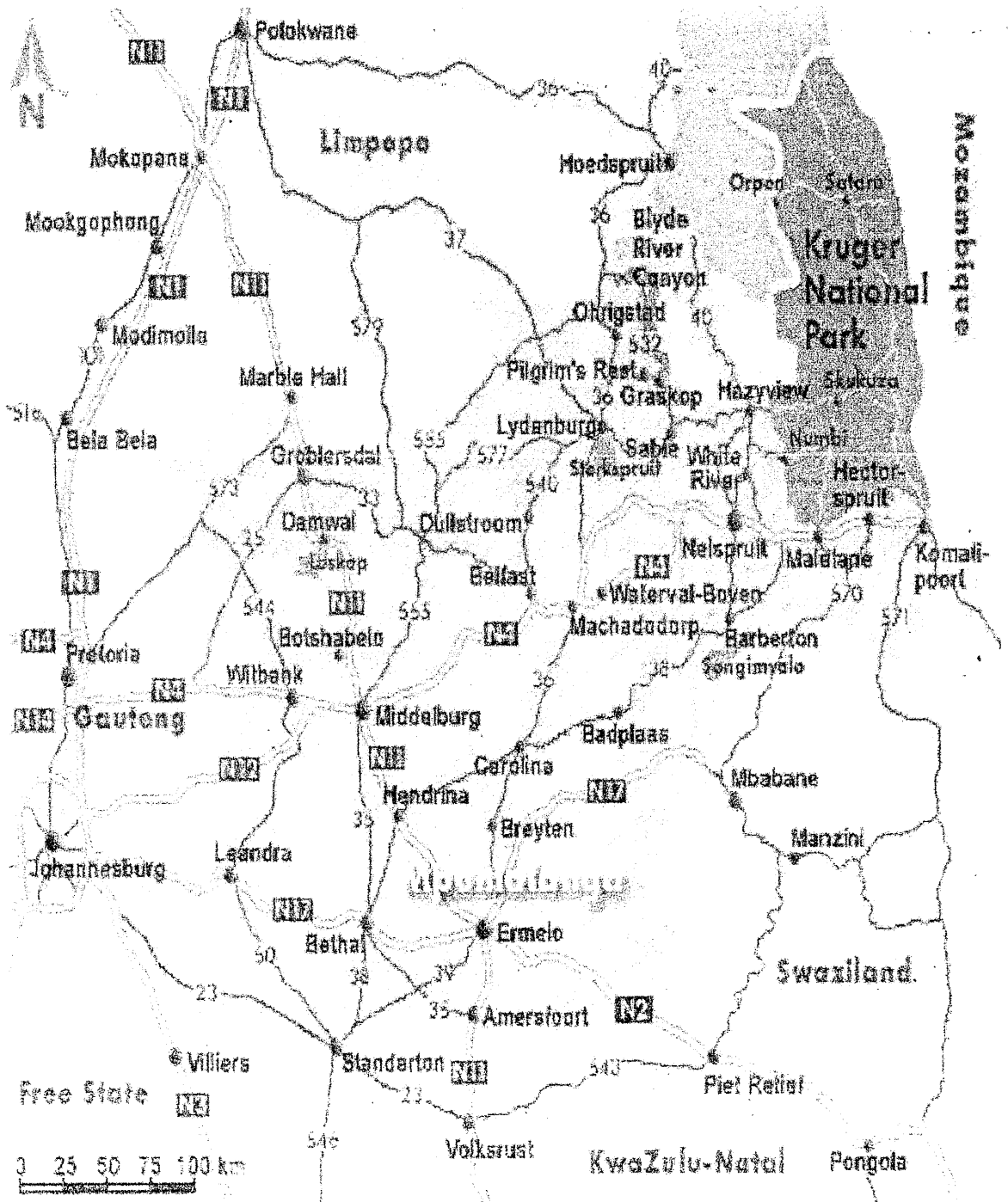| BMI	Calculation
Less than 18,5	Underweight
From 18,5 to 24,9	Normal
From 25 to 29,9	Overweight
From 30 upwards	Obese

$$BMI = \frac{Weight \ (in \ kg)}{[Height \ in \ (m)]^2}$$

3.1.   Calculate his Body Mass Index rounded to the nearest whole number and verify whether his family is correct. (5)
3.2.   Discuss 2 ways in which Alex can bring his weight to normal status. (4)
3.3.   Convert his weight to grams. (2)

                    [10]

QUESTION FOUR

Refer to the Provincial map below.
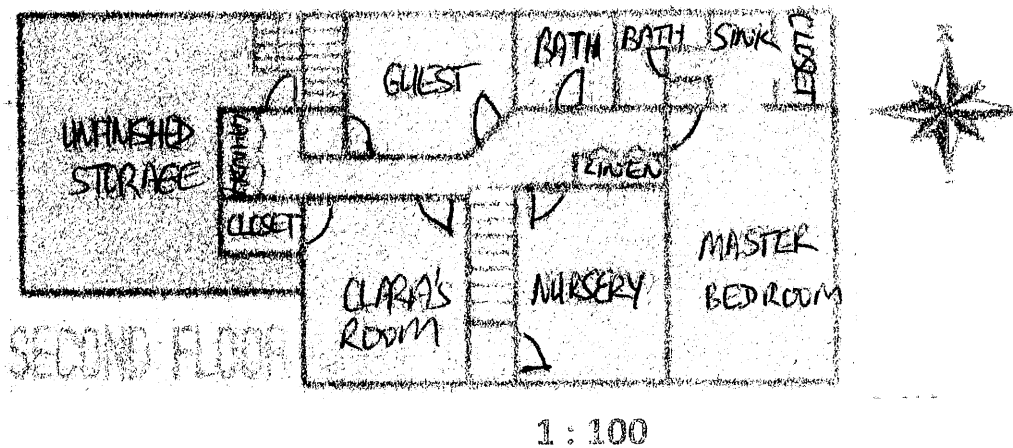
4.1.   Name the type of scale used on the map.   (2)
4.2.   State one advantage of the above type of scale.   (2)
4.3.   On which National road will you travel from Volksrust to Ermelo?   (2)
4.4.   Which town on the N2 lies to the South East of Piet Retief?   (2)
4.5.   Identify a city or town on the N4 that links Middelburg to Gauteng. (2)
4.6.   Calculate the actual distance from Breyton to Mbabane in km.   (3)
4.7.   Sitha measures the distance from Durban to Pietermaritzburg as 18cm on a map.
        Calculate the true distance in km if the scale of the map is 1:500 000. (3)

[16]

QUESTION FIVE

Use the floor plan below to answer the questions.

1 : 100

5.1.   Identify the type of scale used on the plan.   (2)
5.2.   Explain what the scale means .   (2)
5.3.   What is the compass direction of the master bedroom from the guestroom? (2)
5.4.   Calculate the actual measurements of the northern wall of the house. Convert your answer to metres. (5)

5.5.   What is the disadvantage of this type of scale in plans? (2)

5.6.   Measure the length of the guestroom in cm. Use the conversion factor below and convert your measurement to inches. (4)   1 inch = 2,54 cm

5.7.   Draw the symbol from the plan that represents a door. (2)

[19]

ANSWER SHEET

NAME OF LEARNER: _____

QUESTION 1.3

Cost / Income (R) vs Number of pies