



Province of the
EASTERN CAPE
EDUCATION

**NATIONAL
SENIOR CERTIFICATE**

GRADE 11

NOVEMBER 2011

MATHEMATICAL LITERACY P2

MARKS: 100

TIME: 2½ hours



This question paper consists of 9 pages, including an annexure of 2 pages.

INSTRUCTIONS AND INFORMATION

Read the following instructions carefully before answering the questions.

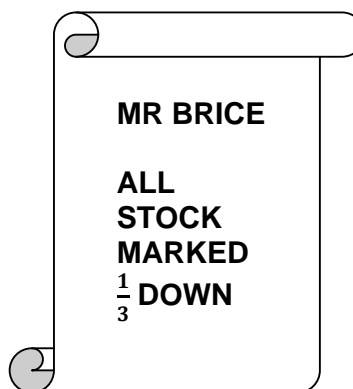
1. This question paper consists of FOUR questions. Answer ALL the questions.
2. QUESTIONS 2.3 must be answered on the attached ANNEXURE B. Write your name in the spaces provided and hand in the annexure with the ANSWER BOOK.
3. Number the questions correctly according to the numbering system used in this question paper.
4. An approved calculator (non-programmable and non-graphical) may be used, unless stated otherwise.
5. ALL calculations must be shown clearly.
6. ALL the final answers must be rounded off to TWO decimal places, unless stated otherwise.
7. Start EACH question on a NEW page.
8. Write neatly and legibly.

QUESTION 1

Jocelyn received her monthly allowance from her parents and decided to shop at the Intown Centre in Johannesburg Central. She accompanied her parents to the centre.

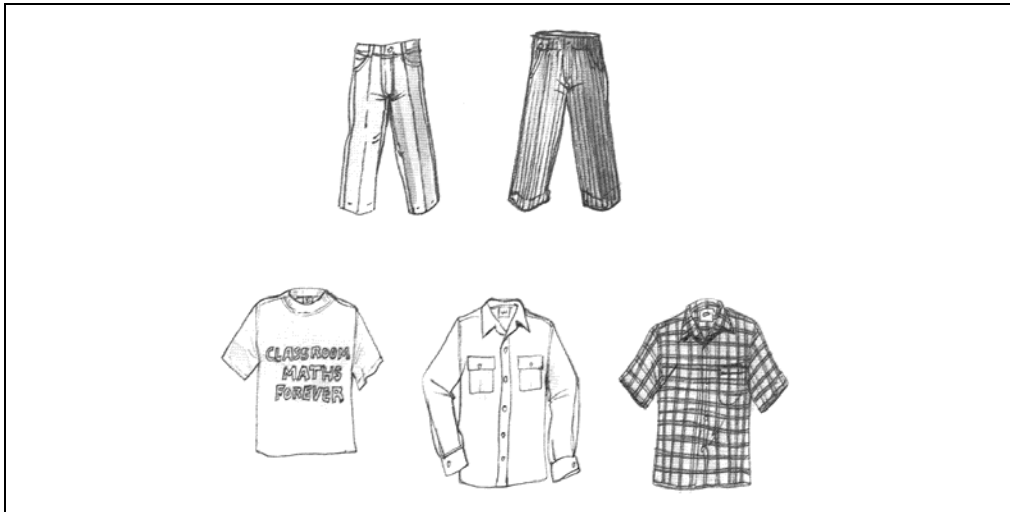
- 1.1 Use the map of Johannesburg Central (ANNEXURE A) and answer the questions below.
- 1.1.1 Give the grid reference of the Intown Centre. (1)
- 1.1.2 The distance from Jocelyn's house to the Intown Centre is 15,8 cm. Use the scale of the map to calculate the actual distance (in kilometer) from Jocelyn's house to the Intown Centre. (3)
- 1.1.3 Coming from a northerly direction, Jocelyn's father wants to turn right on the corner of Wanderers Street and De Villiers Street (Block C2). Refer to the map and say whether this is possible. Explain your answer. (3)
- 1.1.4 The Intown Centre consists of a shopping complex as well as a parking area. Calculate the space that is covered by the parking area in m^2 . Use the formula; $\text{Area} = L \times B$. (5)

- 1.2 Jocelyn saw a pair of jeans in two different shops that is exactly the same. The original price of the jeans at both Mr. Brend and Mr. Brice is R320. The following advertisements were placed in the windows of these two shops.



- 1.2.1 Jocelyn claims that if she buys the jeans from Mr Brice it will cost her less. Show by means of a calculation whether you agree or disagree with her. (8)

1.3



Jocelyn's mother bought two jeans (one for the winter and one for the summer) as well as three shirts (a summer t-shirt, a winter shirt and a summer sport shirt) for her brother as illustrated above.

1.3.1 How many outfits will he have if he mixes and matches the jeans and the shirts? (2)

1.3.2 If her brother takes clothes from the cupboard without looking, what is the probability that he will take out a jeans and a shirt which can be worn in summer weather. Show your calculations. (4)

1.4 At the entrance of the parking area of the Intown Centre, Jocelyn's father received a parking ticket that stated they arrived at 09h45. They left the Intown Centre at 15h13. The following parking tariffs apply for the centre.

Hours	Amount
0 – 1	Free
1 – 2	R 7,00
2 – 3	R 8,00
3 – 4	R 9,00
4 – 5	R 10,00
5 – 7	R 15,00
7 – 9	R 18,00
9 – 10	R 20,00

1.4.1 How long did they spend in the shopping centre? Give you answer in hours and minutes. (3)

1.4.2 How much will Jocelyn's father pay for parking? (2)

[31]

QUESTION 2

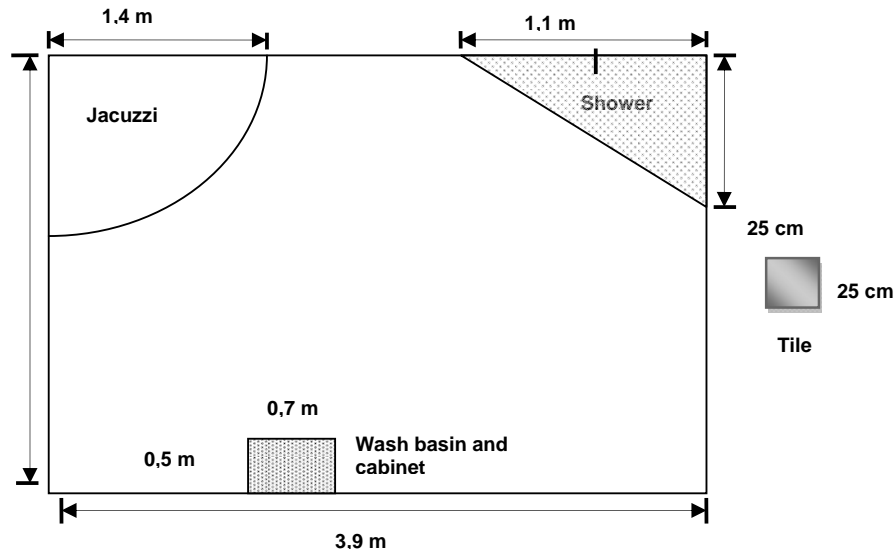
- 2.1 Mr Bucks, a street hawker who sells fruit, wants to compare his profits from his street business over the months from June to August. In June his profits were R500 from selling oranges, R300 from bananas and R160 from avocados. In July his profits were $\frac{1}{5}$ less than June from oranges, R350 from bananas and 100% more than June from avocados. In August his profits were R600 from oranges, 70% less than July for bananas and $\frac{3}{4}$ more than June from avocados.
- (a) Calculate Mr Bucks profits for July for the following fruit:
- (i) Oranges (2)
 - (ii) Avocados (2)
- (b) Calculate Mr Bucks profits for August for the following fruit:
- (i) Bananas (2)
 - (ii) Avocados (2)
- 2.2 Calculate the percentage increase in the profits for bananas from June to July. Give your answer to 1 decimal place. (3)
- 2.3 Use the information given as well as your calculated answers to complete the multiple (compound) bar graph in ANNEXURE B. (8)
- 2.4 Use the graph to determine which type of fruit yield the highest profit over the three month period. Give a reason for your answer. (2)
- 2.5 Mr Bucks has calculated his mean (average) profits for the three month period as R335. Show by means of calculation that this is correct. (4)

[25]

QUESTION 3

3.1

Ms Morris wants to have her newly built bathroom tiled. The bathroom has a rectangular shape with dimensions 3,9 m x 2,5 m. Parts of the floor area are taken up by a Jacuzzi, a shower and a wash basin cabinet. The floor plan of the bathroom is shown below.

**BATHROOM FLOOR PLAN**

The following formulae will be useful to answer the questions:

$$\text{Area} = L \times B$$

$$\text{Area} = \frac{1}{2} b \times h$$

$$\text{Area} = \pi r^2 \text{ where } \pi = 3,14$$

- 3.1.1 Calculate the area of the Jacuzzi. (4)
- 3.1.2 Calculate the area of the shower. (3)
- 3.1.3 Calculate the area of the wash basin cabinet. (3)
- 3.1.4 Now calculate the area that needs to be tiled. (2)
- 3.1.5 Mrs Morris wants to buy a tile with dimensions of 25 cm x 25 cm. How many tiles will she need to tile the bathroom? (3)
- 3.1.6 Do you think the number of tiles that you have calculated in QUESTION 3.1.5 will be sufficient to do the tiling? Give a reason for your answer. (3)

- 3.2 Mrs Morris wants the tiling job done as soon as possible. She has to decide how many workers she will employ to do the job. She approached a qualified tiler. The tiler uses the table below to explain to her how the different options that she can consider.

Number of workers	1	2	3	4	A	12
Time taken in hours	12	6	B	3	2	1

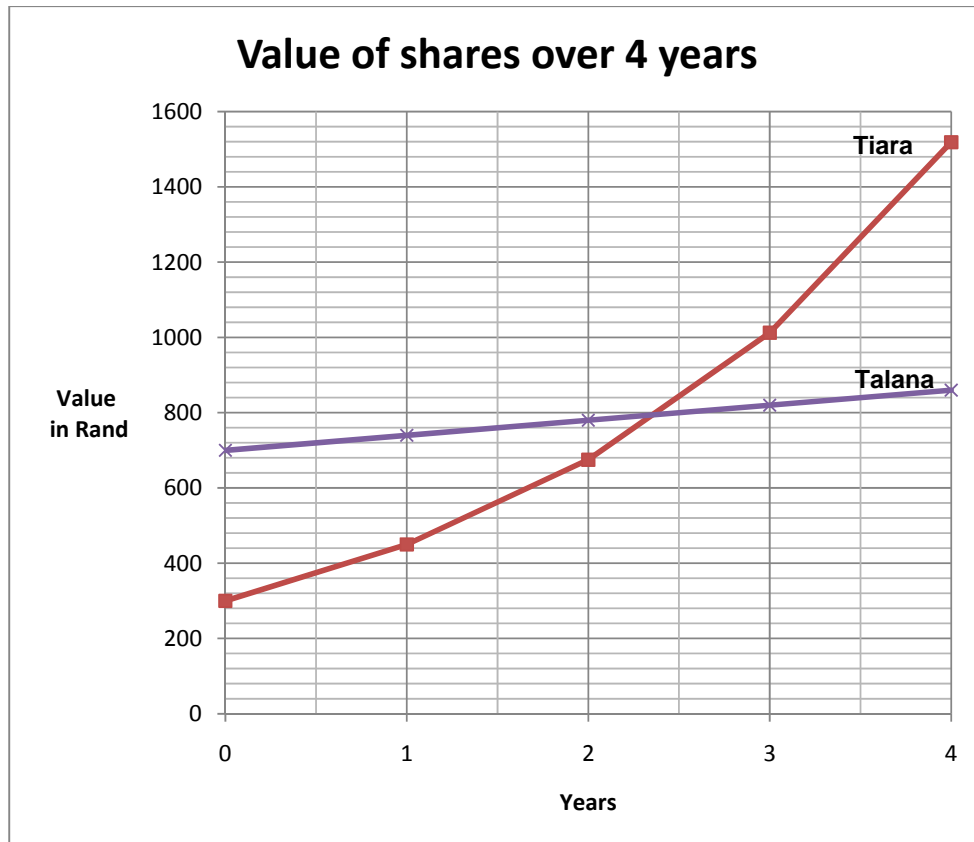
- 3.2.1 Write down a formula to show the relationship between the number of workers and the time taken to do the job. Use workers as (w) and time as (t). (3)
- 3.2.2 Use the formula to calculate the value of:
- (a) A and (1)
- (b) B (1)
- 3.2.3 Describe the change in the time taken in hours as the number of workers change from left to right. (2)
- 3.2.4 What type of proportion is illustrated by the table? (1)
- 3.2.5 In terms of the area that needs to be tiled, will it be practical for Mrs Morris to employ 12 workers? Give a reason for your answer. (3)

[29]

QUESTION 4

- 4.1 On the same day Tiara and Talana decided to buy shares on the stock market.

The following graph shows how their shares increased over a period of four years.



Use the graph to answer the following questions.

- 4.1.1 What was the value of the shares bought by:
- (a) Tiara and (1)
 - (b) Talana (1)
- 4.1.2 (a) After approximately how many months did Tiara and Talana break even? (2)
- (b) Approximately how much was the value of their shares at this point? (1)

4.1.3 Explain, why at the end of the fourth year:

(a) Talana's shares was worth ± R860 and (2)

(b) Tiara's shares was worth ± R 1 500. (2)

4.2 Talana claims that if she invested her money for 4 years at an interest rate of 5,5% per annum, her money would have been more than R860.

Do you agree with this statement? Show all your calculations.

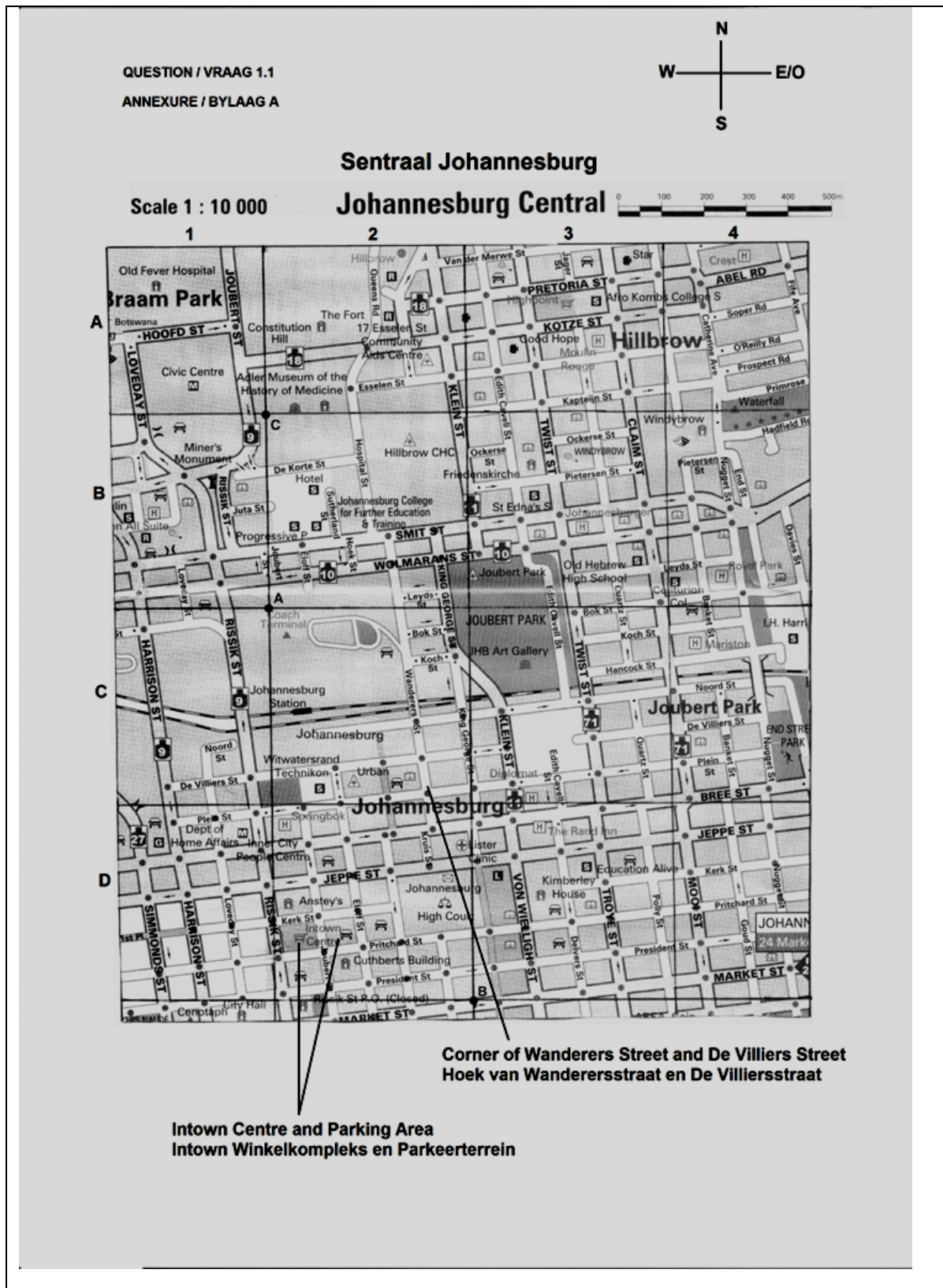
Use the formula: $A = P(1 + i)^n$ (6)

[15]

TOTAL: 100

QUESTION 1.1

ANNEXURE A



QUESTION 2.3

ANNEXURE B

NAME: _____

