Province of the
EASTERN CAPE
EDUCATION

NATIONAL SENIOR CERTIFICATE

GRADE 11

NOVEMBER 2023

MATHEMATICAL LITERACY P2

MARKS: **100**

TIME: **2 hours**

This question paper consists of 11 pages, including an addendum with 2 annexures.

INSTRUCTIONS AND INFORMATION

1. This question paper consists of FOUR questions.

2. Use the ANNEXURE in the ADDENDUM to answer the following questions.

   - ANNEXURE A for QUESTION 2.1
   - ANNEXURE B for QUESTION 4.1

3. Answer ALL the questions.

4. Number the questions correctly according to the numbering system used in this question paper.

5. Diagrams are NOT necessarily drawn to scale.

6. Round off ALL the final answers appropriately according to the context used, unless stated otherwise.

7. Indicate units of measurement, where applicable.

8. Start EACH question on a NEW page.

9. Show ALL calculations clearly.

10. Write neatly and legibly.

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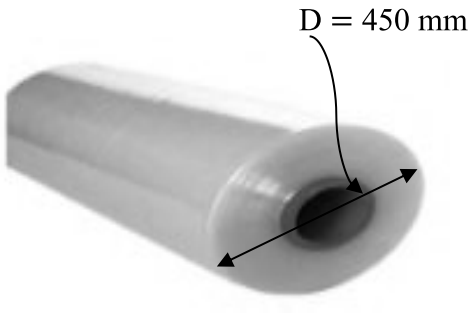
QUESTION 1

1.1 A young entrepreneur stocks sheet rolls for securing products on pallets. These rolls are suitable for wrapping goods. They are sold in 200 m and 300 m rolls.

Option A:
300 m sheet roll cost R390,00

Option B:
200 m sheet roll cost R290,00

Diameter of roll (D) = 450 mm



[Source: www.supplywise.co.za]

Use the information above to answer the questions that follow.

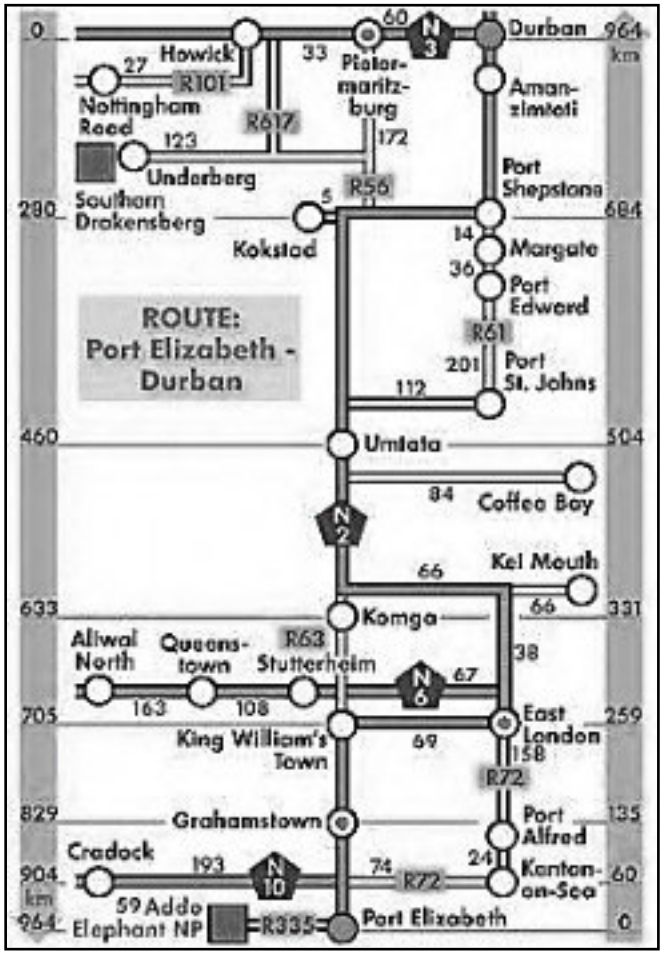
1.1.1 The circumference is 3,142 times more than the diameter. Calculate the circumference of the roll in mm. (2)

1.1.2 Calculate the cost of the pallet sheet roll per meter for Option **B**. (2)

1.1.3 Write the cost for Option **B** to Option **A** in simplified ratio format. (2)

1.1.4 Determine the radius in cm. (3)

1.2 David and his family travelled from Port-Elizabeth (now Gqeberha) to Durban for the school holidays. The map below shows the journey the family undertook.



Use the information above to answer the questions that follow.

1.2.1 Name TWO national roads indicated on the map. (2)

1.2.2 Identify the type of map shown. (2)

1.2.3 Determine the actual distance between Port-Elizabeth and Durban in metres. (3)

1.2.4 David quickly visited his cousin in Margate. Just after Umtata he entered the R61 to Margate.

(a) Write down the name of ONE town he passed between Umtata and Margate. (2)

(b) Calculate the total distance, in km that he travelled from Port St. Johns to Margate. (3)

1.2.5 Name TWO provincial roads on the map. (2)
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QUESTION 2

2.1 A group of four university friends plan to watch the rugby game between the Springboks and All Blacks in Durban. They plan to travel by car and share the cost of the trip.

On ANNEXURE A is a map of South Africa.

Use ANNEXURE A of the addendum to answer the questions that follow.

2.1.1 Identify the type of scale on the map. (2)

2.1.2 What is the general direction from Umtata to Cape Town? (2)

2.1.3 Durban and Upington are 9,6 cm apart on the map. Mr Antonie claims that the distance between Durban and Upington is 972 km.

Verify if his statement is correct by using the bar scale method. (4)

2.2 Amos and his friends took exactly 17,25 hours to drive 1 635 km from Cape Town to Durban for the rugby game between the Springboks and the All Blacks.

2.2.1 Determine Amos's average speed for the trip in km/h.

You may use the following formula: **Speed = Distance ÷ Time** (3)

2.2.2 The petrol consumption of the car is 1 litre per 12,5 km.

(a) Amos claimed that if the petrol consumption was 0,80 litre per 10 km, the car would use less petrol. Verify with the necessary calculation if his statement is valid. (5)

(b) Calculate the cost of petrol to drive from Cape Town to Durban. The petrol price is R24,75 per litre. (2)

[18]

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QUESTION 3

3.1 Uyathanda Home Industry specialises in baking and selling cakes of all types. The recipe of a cake is shown below. Study the recipe and answer the questions that follow.

INGREDIENTS	SOUR CREAM CHOCOLATE CAKE
• $\frac{3}{4}$ cups (250 g) flour • $1\frac{3}{4}$ cups (360 g) sugar • $\frac{3}{4}$ cup (90 g) unsweetened cocoa powder • 2 teaspoons baking powder • 1 teaspoon kosher salt • 2 large eggs • 1 cup sour cream • $\frac{3}{4}$ cup canola oil • 2 teaspoons vanilla extract • 1 cup strong piping hot coffee • 1 mixture ($1\frac{1}{2}$ cups) chocolate or cream cheese frosting	• Preparation time: 20 minutes • Baking time: 55 minutes • Total time: 75 minutes

Other information:
- Preheat the oven to 320 °F

NOTE:
- An order was received for 90 people who will be attending an event.
- Each person must get one slice of cake.
- 12 slices can be cut from one cake.
- One cake weighs 900 g.
- The amount of energy in 100 g of cake is 400 calories.

3.1.1 Write down the mass of one cake in kilograms. (2)

3.1.2 Determine the mass of one slice of cake in grams. (2)

3.1.3 Calculate the number of calories in one slice of cake. (3)

3.1.4 Convert total time in minutes to hours. (2)

3.1.5 Determine the number of cakes that should be baked for the number of guests at the event. (4)

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3.2 3.2.1 How many cups of flour is required if eight cakes must be baked? (2)

3.2.2 The cost of 240 g of unsweetened cocoa powder is R62,75. Determine how much money will be needed for unsweetened cocoa powder for 8 cakes. (4)

3.2.3 Calculate the temperature of 320 °F in degrees Celsius.

Use the formula: **°C = (°F − 32) ÷ 1,8** (3)

3.2.4 If a sour cream chocolate cake is placed in the oven at 09h03, at what time will the cake be ready? (2)

3.3 Mr Sihle owns a company which focus primarily on producing cylindrical metal cans for the unsweetened cocoa powder. The volume of the can is 546,10 cm^3. The height of the can's label is 80% of the height of the can.

Refer to the diagram below and answer the questions that follows.



NOTE:
You may use the formula below.
Volume = 3,142 × r^2 × height

3.3.1 Determine the height of the can in cm. (4)

3.3.2 Mr Sihle stated that the height of the can is 1,5 cm more than the height of the label. Verify by means of a calculation whether his statement is valid. (4)
[32]

QUESTION 4

4.1 Mrs Aretha Smith has a floor plan for the new house she wants to build. Refer to ANNEXURE B which shows an image of the floor plan of this house.

Use ANNEXURE B to answer the questions that follow.

4.1.1 Explain the term '*floor plan*'. (2)

4.1.2 How many windows are there on the east wall of the house? (2)

4.1.3 Use the number scale given and determine the actual total length of all the outside walls of the house on the Northern and Eastern sides. Give your final answer in metres. (7)

4.1.4 The area of the porch is 19,38 m^2, and the length is 10,2 m. Mrs Smith stated that the width is six times less than the length.
Verify with the necessary calculations if her statement is valid. (4)

You may use the formula: **Area = length × breadth**

4.2 Mr Smith surprises his wife and gives her a rare lucky coin on her birthday. The coin has a square cut out of the middle as shown in the photo below.

NOTE:
Length of one side of the square = 0,9 cm
Diameter of circle = 3,3 cm
Volume of the coin = 1,47 cm^3

FORMULAE:
Area of circle $= \pi \times r^2$; where $\pi = 3{,}142$
Area of square = side × side

Density $= \frac{Mass}{Volume}$



[Source: www.walmart.com]

Use the information above to answer the questions that follow.

4.2.1 Calculate the area of the coin in cm^2. Round your answer off to ONE decimal place. (5)

4.2.2 The density of gold is 19,30 g / cm^3, calculate the mass of the coin in grams. (2)
Round your answer off to ONE decimal place.

4.3 A box contains 12 gold coins, 2 silver coins and 2 bronze coins.

4.3.1 Determine the probability of selecting a gold coin in decimal format. (3)

4.3.2 Refer to your answer in QUESTION 4.3.1. Explain the probability of the event in words. (2)
[27]

TOTAL: 100

ANNEXURE A

QUESTION 2.1

Below is a map of South Africa.

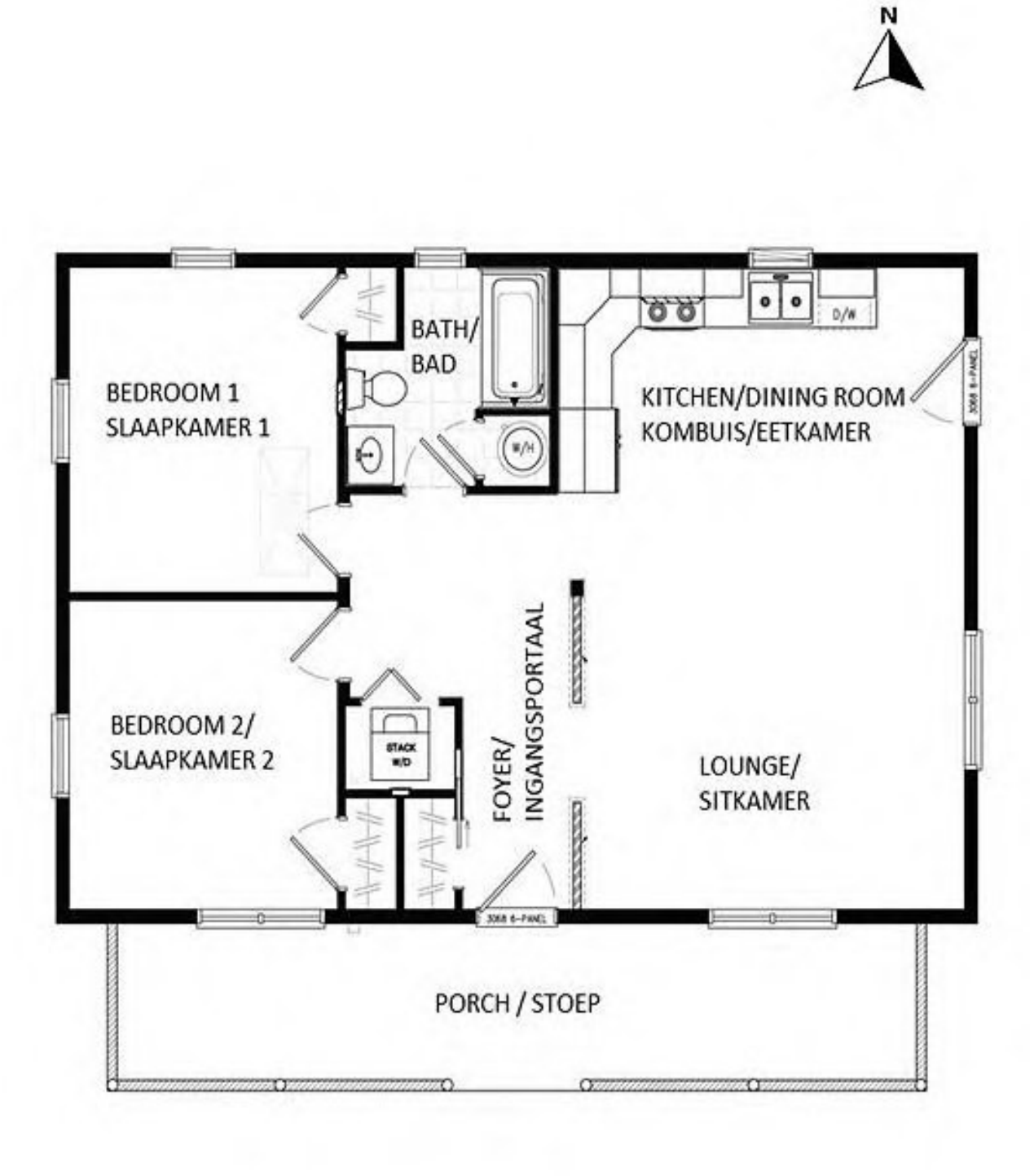


[Source: http://www.lonelyplanet.com/maps/Africa/south-africa/map of south-africa.jpg]

ANNEXURE B

QUESTION 4.1

Floor plan of Mrs Smith's house:



Scale 1 : 100