



Province of the  
**EASTERN CAPE**  
EDUCATION



**NATIONAL  
SENIOR CERTIFICATE**

**GRADE 12**

**SEPTEMBER 2022**

*Stanmorephysics.com*

**MATHEMATICAL LITERACY P2**

**MARKS: 150**

**TIME: 3 hours**



This question paper consists of 12 pages and an addendum with 2 annexures.

**INSTRUCTIONS AND INFORMATION**

1. This question paper consists of FIVE questions.
2. Use the ANNEXURES in the ADDENDUM to answer the following questions:
  - ANNEXURE A for QUESTION 2.1 and 2.2
  - 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 and maps 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.

## QUESTION 1

1.1 Mrs Bester sells 450 g packs of rusks at R49,50 per pack.

The table below shows the main ingredients of the rusks.

**TABLE 1: MAIN INGREDIENTS TO BAKE 5 000 g OF RUSKS**

Ingredients	Quantities
Self-rising flour	1,56 kg
Bran flour	6,25 cups
Raisins	125 g
Butter	625 g

**NOTE:** A rusk is a hard, dry biscuit or twice baked bread.


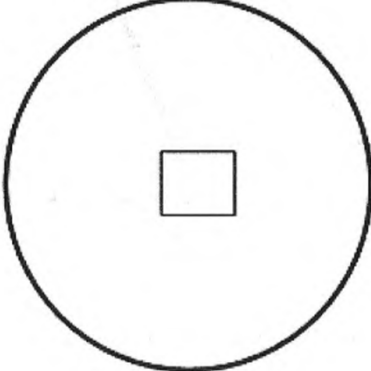
[Adapted from [www.food24.com/Recipes-and-Menus/South-African-Recipes](http://www.food24.com/Recipes-and-Menus/South-African-Recipes)]

Use the information above to answer the questions that follow.

- 1.1.1 Convert 1,56 kilogram (kg) to gram (g). (2)
- 1.1.2 Write in simplified ratio form, the mass of raisins to mass of butter. (2)
- 1.1.3 Calculate the number of cups of bran flour needed if Mrs Bester bakes 8 kg of rusks. (3)
- 1.1.4 Calculate the mass of raisins needed to bake a 450 g pack of rusks. (3)

1.2 Below is a coin that has a square hole in its centre.

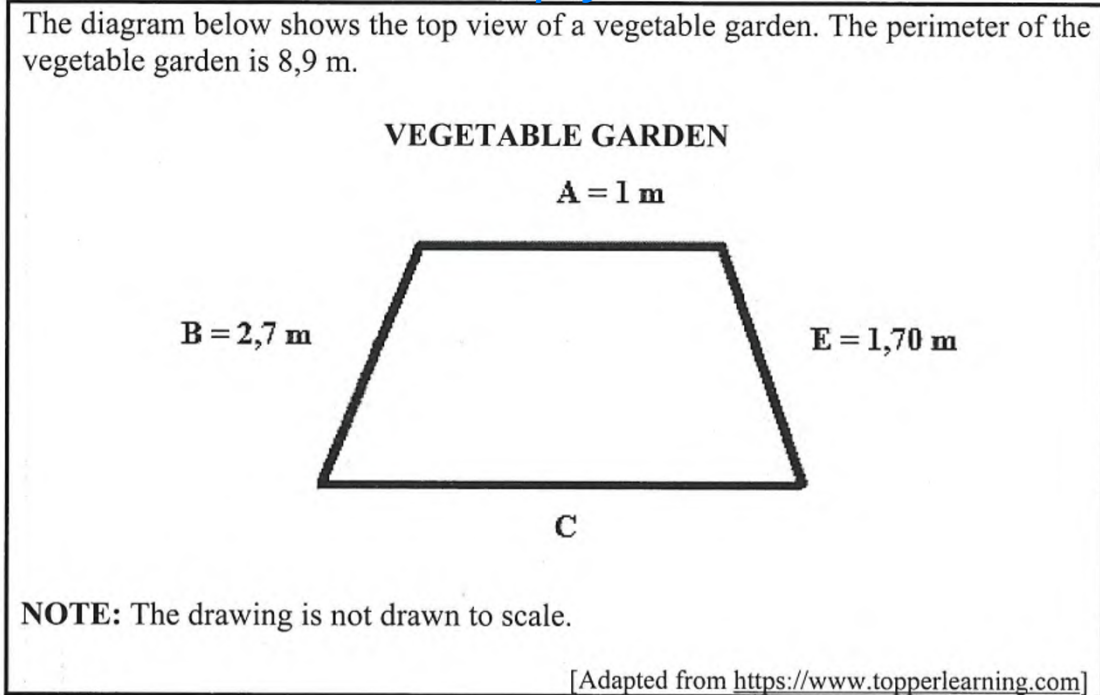


PICTURE OF A COIN WITH A HOLE IN THE MIDDLE	DIAGRAM OF THE TOP SURFACE OF THE COIN
	 <p data-bbox="826 846 1305 880">Diameter of circular coin = 32 mm</p>
<p><b>NOTE:</b></p> <ul style="list-style-type: none"> <li>• The square hole has an area of <math>0,9025 \text{ cm}^2</math></li> <li>• The circular coin has an area of <math>8,04 \text{ cm}^2</math></li> <li>• The weight of the coin (mass of the coin) is <math>28,25 \text{ g}</math></li> </ul> <p data-bbox="820 1122 1342 1146">[Source: <a href="http://www.pinterest.com">www.pinterest.com</a> and <a href="http://www.bin.com">www.bin.com</a>]</p>	

Use the information above and answer the questions that follow.

- 1.2.1 Define the term '*diameter*' regarding the diagram of the top surface of the coin. (2)
- 1.2.2 Calculate the difference between the area of the circular coin and the square hole area in  $\text{mm}^2$ . (4)
- 1.2.3 Write the square hole area of the coin as a percentage of the circular coin area in the diagram shown above. (2)
- 1.2.4 Express the weight of the coin in kg. (2)
- 1.2.5 Calculate the radius of the coin in mm. (2)
- 1.2.6 Calculate the total weight of 15 coins in grams. (2)
- 1.2.7 Write down the exact time (in hours and minutes) if it was bought at 11:15 and sold 4 hours and 50 minutes later. (3)

1.3 The diagram below shows the top view of a vegetable garden. The perimeter of the vegetable garden is 8,9 m.



Use the above information to answer the questions that follow.

1.3.1 Explain what it means when a drawing is not drawn to scale. (2)

1.3.2 Calculate the length of side C. (2)

[31]

## QUESTION 2

- 2.1 A couple from Netherland decided to have a three-day vacation at the Mapungubwe National Park in the Republic of South Africa.

ANNEXURE A contains a map that they used to get to the Mapungubwe National Park.

Use ANNEXURE A to answer the questions that follow.

- 2.1.1 Give the grid reference of the Vhembe Trails Camp. (2)
- 2.1.2 Identify the provincial road between Musina and the Mapungubwe National Park. (2)
- 2.1.3 Name the national road on the map. (2)
- 2.1.4 In which general direction is Pointdrift from Pretoria? (2)
- 2.1.5 Describe using towns and/or route numbers as references, TWO possible routes from Pretoria to Mapungubwe National Park. (6)

- 2.2 South African friends of the Netherlands couple departed from Pretoria at 04h30 am to spend the holiday with them. Their journey is described as follows:

- On their way from Polokwane they took the turn-off to the R521 route
- Rest for 45 minutes at Dendron and
- took 15 minutes to do some shopping and fill up the car's fuel tank at Alldays.

- 2.2.1 If the scale of the map is given as 1 : 3 000 000 and the distance measured on the map between Beitbridge and Musina is 1,3 cm.

Calculate (in km) the actual distance between Beitbridge and Musina. (3)

- 2.2.2 Determine, showing ALL calculations, the distance from Pretoria to Mapungubwe National Park as it appears on the map. (2)

- 2.2.3 The South African friends travelled at an average speed of 120 km/h between Pretoria and Mapungubwe National Park aiming to arrive at 10:00 am. Also considering ALL stoppages, show with calculations whether they will make it at this aimed time.

You may use the following formula: **Distance = Average Speed × Time** (8)

- 2.2.4 The petrol consumption of the car is 0,79 litres per 10 km.

- (a) Determine the total litres of fuel to be used between Pretoria and Mapungubwe National Park. (4)

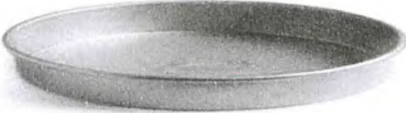
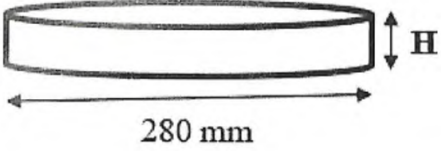
- (b) Calculate the cost of petrol to drive from Pretoria to the Mapungubwe National Park. The petrol price is R23,90 per litre. (2)

[33]

## QUESTION 3

3.1

Miss Bagley's son owns a small bakery. She uses a cylindrical baking pan as shown below.

PICTURE OF A BAKING PAN	DIMENSIONS OF A BAKING PAN
	

**Other information:**

- A cylindrical baking pan has a  $3\,079,16\text{ cm}^3$  capacity
- The oven must be preheated to  $430\text{ }^\circ\text{F}$  before placing the baking pans

[Source: [www.google.com](http://www.google.com)]

Use the information above to answer the following questions.

3.1.1 Calculate (in cm) the circumference of the cylindrical baking pan.

Use the formula: **Circumference of circle** =  $2 \times 3,142 \times \text{radius}$  (3)

3.1.2 Determine (in cm) the height of the cylindrical baking pan.

You may use the formula:

**Volume of a cylindrical baking pan** =  $3,142 \times (\text{radius})^2 \times \text{height}$  (5)

3.1.3 Convert  $430\text{ }^\circ\text{F}$  to degrees ( $^\circ\text{C}$ ).

Use the formula:  $^\circ\text{C} = (^\circ\text{F} - 32) \div 1,8$  (3)

- 3.2 Miss Bagley is concerned about the amount of sugar intake she consumes. She reads an article on the internet about the amount of sugar contained in some drinks.

TABLE 2 below shows the sugar content per volume of some drinks.

**TABLE 2: SUGAR CONTENT PER VOLUME OF SOME DRINKS**

NAME OF DRINK	VOLUME (IN ml)	NUMBER OF GRAMS OF SUGAR PER ml	NUMBER OF CALORIES
Energade	500	20 g	80
Vitamin water	500	5,5 g	90,9
Monster	500	57,3 g	A
Dry Lemon	330	B	169,2
Coca-Cola	330	35 g	140
Orange juice	240	21,1 g	-

**NOTE:** 1 g of sugar = 4 calories  
1 teaspoon sugar = 4 g

[Adapted from [www.mobilefatsecret.com](http://www.mobilefatsecret.com)]

Use the information above to answer the questions that follow.

- 3.2.1 Calculate the missing values **A** and **B**. (4)
- 3.2.2 Determine the total amount of sugar (in grams) that will be consumed by Miss Bagley if she drinks THREE cans of Monster per week. (2)
- 3.2.3 Miss Bagley decided to be more health conscious and changed her drinks to:
- TWO 500 ml vitamin water per day
  - ONE 500 ml Energade per week
- Verify, by show of calculation, whether her sugar intake per week is now 56,4% of the previous intake. (6)
- 3.2.4 Calculate the total mass of sugar (in kilograms) that will be consumed by ONE person in ONE year by drinking TWO 330 ml cans of Coca-Cola daily. (4)
- 3.2.5 Suggest TWO ways on how Miss Bagley can reduce her sugar intake. (4)

**[31]**



## QUESTION 4

- 4.1 Mrs Arison has a floor plan with dimensions in *feet* and *inches* for a house she intends 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 The plan for the house is an open kitchen living room plan. Explain the meaning of this concept '*open kitchen living room plan*' using the information in the plan. (2)
- 4.1.2 Name TWO bathrooms that are adjacent (i.e. share a back wall) to each other. (2)
- 4.1.3 In which general direction do bedrooms 3 and 4 windows face? (2)
- 4.1.4 Determine the number of doors shown on this floor plan. (2)

- 4.2 Mrs Arison needs to convert the measurements of the plan to metres since she will be building the house in South Africa.

**NOTE:** 1 foot (") = 30,48 cm

1 inch (') = 0,0254 m

**Dimensions:**

Bedroom no.	Length	Width
2	14 feet 5 inches	10 feet 9 inches
4	12 feet 2 inches	10 feet 3 inches

Use the information above to answer the questions that follow.

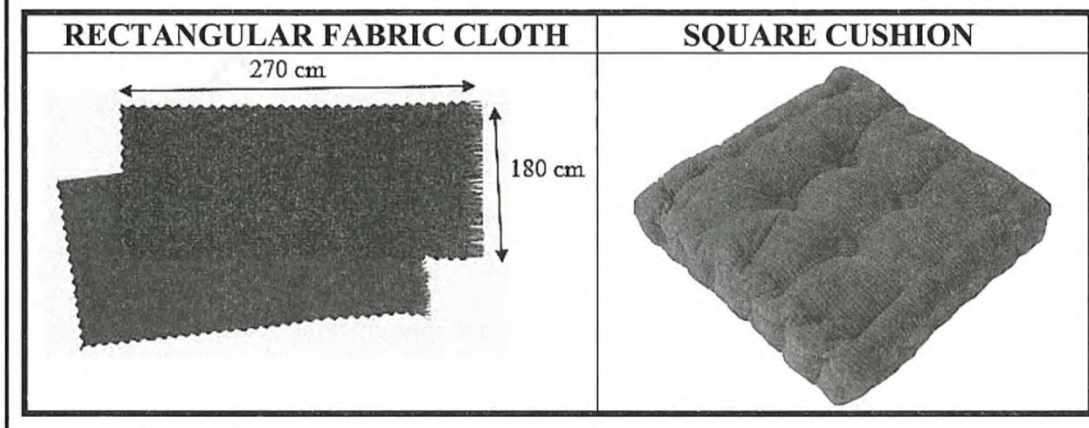
- 4.2.1 Use the measurements given to calculate the total length of bedroom 2 and bedroom 4 in metres. (6)
- 4.2.2 Ceilings of bedroom 2 needs to be painted with one coat of paint. Mrs Arison states that one 2,5 litre tin of paint will be enough for painting bedroom 2. The spread rate of paint is  $6 \text{ m}^2$  per litre.

Verify, by showing ALL calculations, whether Mrs Arison is CORRECT.

You may use the formula: **Area of rectangle = Length  $\times$  Width** (8)

4.3

Mrs Arison needs to redecorate her living room. She bought a piece of fabric (material) that is 180 cm wide and 270 cm long. She wants to cut the piece of fabric into squares to make cushions. She uses lace to decorate right round the cushions.



Use the information above to answer the following questions.

- 4.3.1 The top of the square shaped cushions has an area of  $2\,025\text{ cm}^2$ . Mrs Arison states that the total length of the lace needed for one cushion's top or face is less than 2 m. Prove, with the necessary calculations, if her statement is valid.

You may use the following formula:

$$\text{Area of a square} = \text{Side}^2$$

$$\text{Perimeter of a square} = \text{Side} \times 4$$

(6)

- 4.3.2 Determine the number of cushions Mrs Arison will be able to cut from the piece of fabric cloth. Show ALL calculations.

(6)

[34]

QUESTION 5

5.1 A customer plans to buy the 2021 ISUZU SUV that is advertised at a reputable car dealership company. The salesman said to the customer that the company stocks a variety of colours for this SUV.

Currently in stock are:

- 6 black
- 5 metallic grey
- 4 metallic blue
- 3 red and
- 2 white

Below is a photo showing the 2021 ISUZU SUV that arrived in South Africa.





[Source: <https://www.carsguide.com.aumu-x>]

Use the information above to answer the questions that follow.

- 5.1.1 The customer has a garage at home with a width of 3,5 m. He claims that when the car is parked exactly in the middle of the garage, there will be an empty space of more than 0,82 m on each side of the car. With calculations, prove if his claim is valid or not. (5)
- 5.1.2 The customer randomly picks a metallic grey SUV as his favourite choice. Calculate the probability (as a decimal) of choosing a metallic grey SUV. (3)
- 5.1.3 Show that the probability as a percentage of selecting a non-metallic paint ISUZU SUV, is less than 56%. (4)

- 5.2 A company built a three-dimensional (3D) model of the Isuzu MU-X to be used as a toy car displayed on a table. A scale of 1 : 8 is used in the models.

3D model of Isuzu MU-X	Table used for the scale model
	

**NOTE:**

The actual dimensions of the Isuzu MU-X model are:

- **Length** = 482,5 cm
- **Width** = 186 cm
- **Height** = 186 cm

Furthermore, the 3D scale model of the Isuzu MU-X car:

- Must fit on a square tabletop
- The area of the table is  $3\,716,1216\text{ cm}^2$
- Only 35% of the tabletop area must be used for the scale model

Verify, by showing ALL calculations, whether a scale of 1 : 8 will be suitable for the scaled model.

(9)  
[21]

**TOTAL: 150**



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**MATHEMATICAL LITERACY P2  
ADDENDUM**

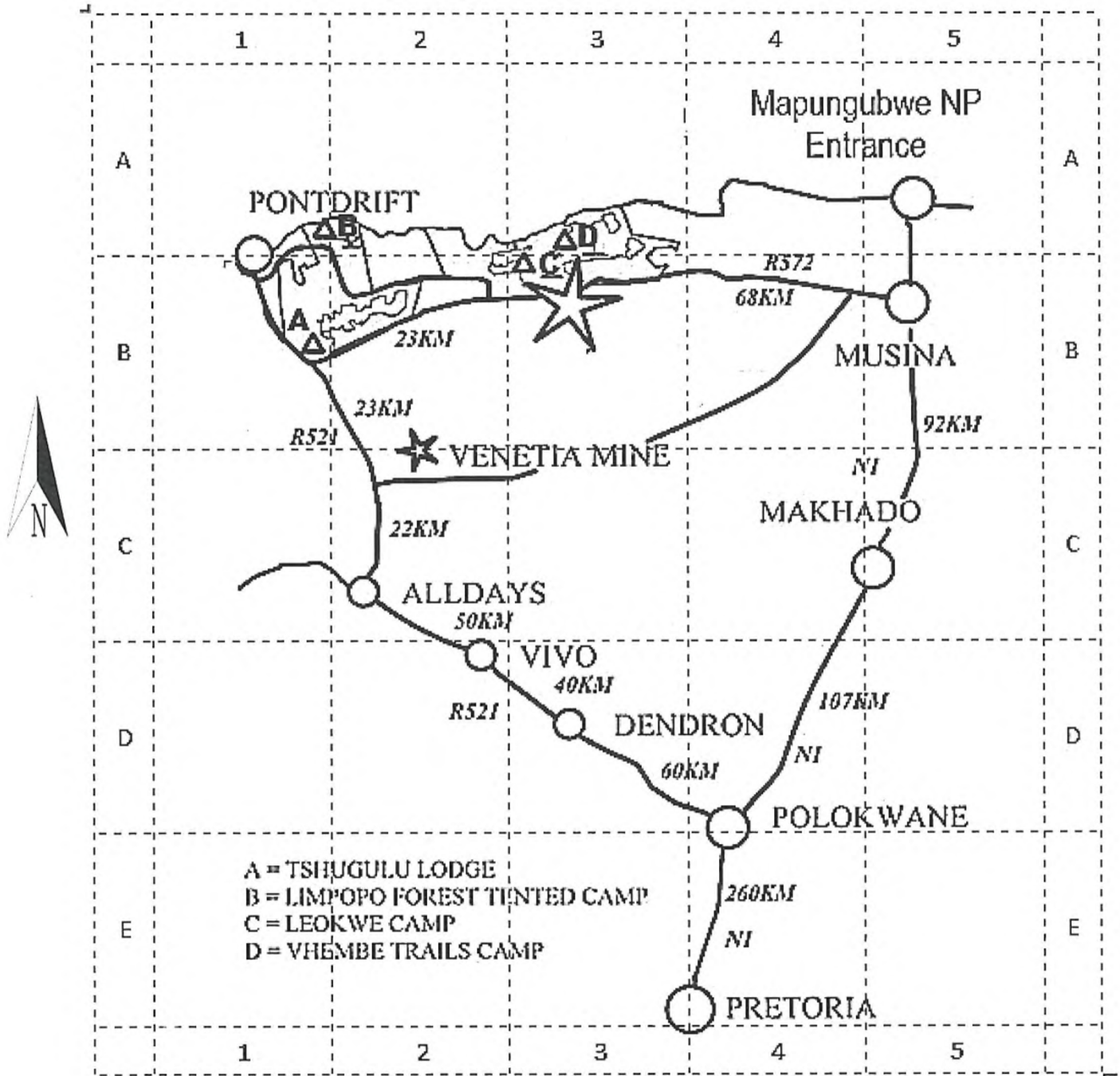


This addendum consists of 3 pages with a 2-page annexure.

ANNEXURE A

QUESTION 2.1

MAP SHOWING ROUTES WITH DISTANCES FROM PRETORIA TO MAPUNGBWE

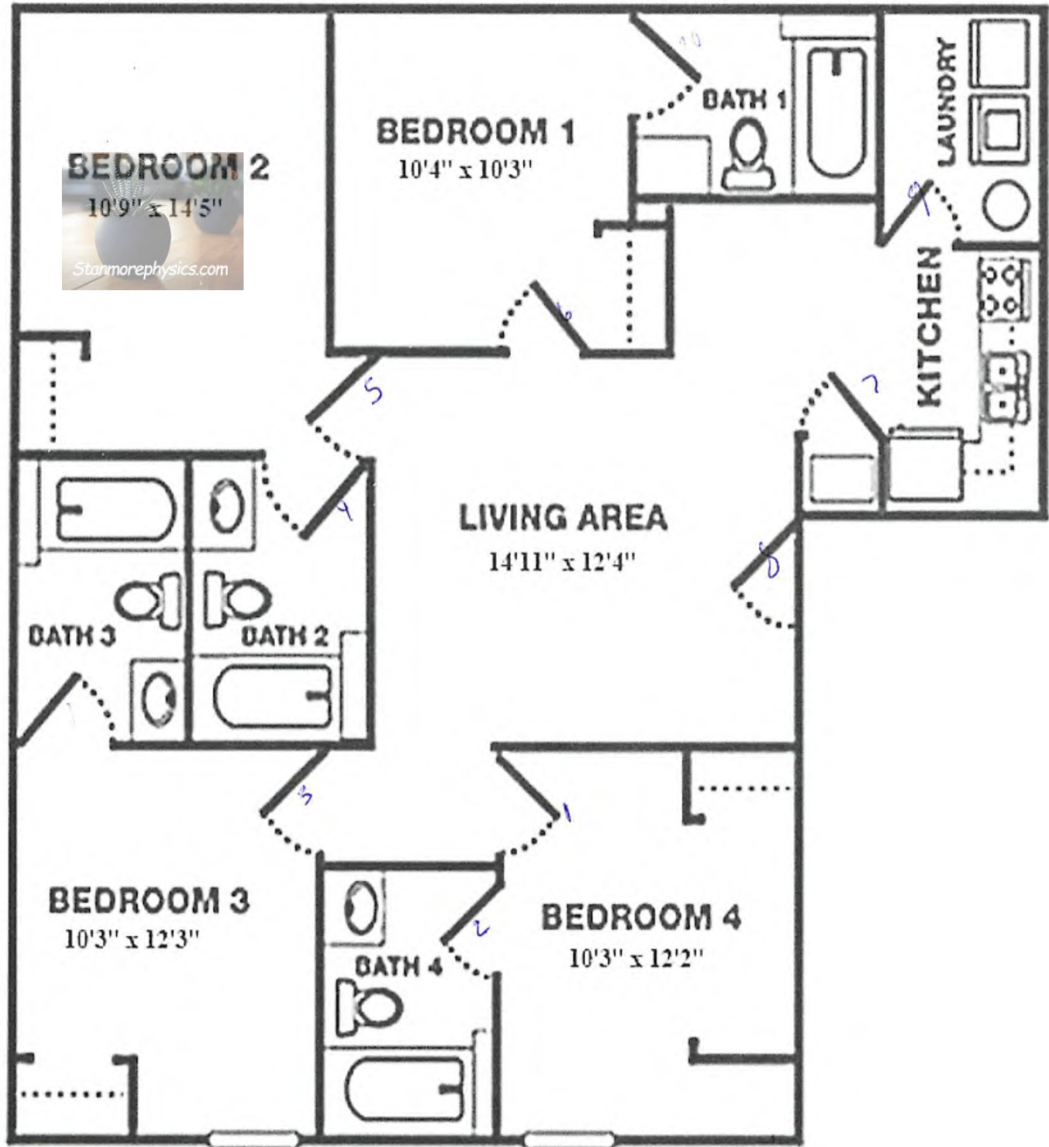


ANNEXURE B

QUESTION 4

FLOOR PLAN FOR A HOUSE

NOTE: ' represents foot  
" represents inch



KEY		
Description		Symbol
Window	=	
Inside room door	=	





# NATIONAL SENIOR CERTIFICATE

**GRADE 12**

**SEPTEMBER 2022**

## MATHEMATICAL LITERACY P2 MARKING GUIDELINE

**MARKS: 150**

Symbol	Explanation
M	Method
MA	Method with accuracy
CA	Consistent accuracy
RCA	Rounding consistent accuracy
A	Accuracy
C	Conversion
S	Simplification
SF	Correct substitution in a formula
J	Justification
O	Opinion/Example/Definition/Explanation/Justification/Verification
RT/RG/RM	Reading from a table/graph/map
P	Penalty, e.g. for no units, incorrect rounding off etc.
R	Rounding off
NPR	No penalty rounding or omitting units
AO	Answer only, full marks

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This marking guideline consists of 12 pages.

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**MARKING GUIDELINES****NOTE:**

- If a candidate answers a question TWICE, only mark the FIRST attempt.
- If a candidate has crossed out (cancelled) an attempt to a question and NOT redone the solution, mark the crossed out (cancelled version).
- Consistent Accuracy (CA) applies in ALL aspects of the marking guidelines; however, it stops at the second calculation error.
- If the candidate presents any extra solution when reading from a graph, table, layout plan and map, then penalise for every extra incorrect item presented.


**LET WEL:**

- As  $n$  kandidaat  $n$  vraag TWEE keer beantwoord, merk slegs die EERSTE poging.
- As  $n$  kandidaat  $n$  antwoord van  $n$  vraag doodtrek (kanselleer) en nie oordoen nie, merk die doodgetrekte (gekanselleerde) poging.
- Volgehoue akkuraatheid (CA) word in ALLE aspekte van die nasienriglyn toegepas, maar dit hou by die tweede berekeningsfout op.
- Wanneer  $n$  kandidaat aflees van  $n$  grafiek, tabel, uitlegplan en kaart en ekstra antwoorde gee, penaliseer vir elke ekstra item.

<b>KEY TO TOPIC SYMBOL:</b>			
<b>F = Finance; M = Measurement; MP = Maps, plans and other representations; P= Probability</b>			
<b>QUESTION 1 [30 MARKS]</b>			
<b>Quest</b>	<b>Solution</b>	<b>Explanation</b>	<b>Level</b>
1.1.1	1,56 kg to g $1,56 \times 1\,000 \checkmark M$ $= 1\,560 \text{ g} \checkmark A$	1M multiply by 1 000 1A correct answer  (2)	M L1
1.1.2	125 g : 625 g $\checkmark MA$ 1 : 5 $\checkmark$	1M divide by 125 1MA answer  (2)	M L1
1.1.3	Convert 8 kg to g $8 \times 1\,000 = 8\,000 \text{ g} \checkmark C$  6,25 cups: 5 000 g  No. of cups = $\frac{8\,000 \times 6,25}{5\,000} \checkmark M$  $= \frac{50\,000}{5\,000}$  $= 10 \checkmark MA$	1C convert 8 kg to g   1M using ratio format   1MA correct answer  (3)	M L1
1.1.4	Mass of raisins = $\frac{450 \text{ g} \times 125 \text{ g}}{5\,000 \text{ g}} \checkmark \checkmark MA$  $= 11,25 \text{ g} \checkmark A$	2MA 450 multiply correct value and divide by 5 000  1A answer  (3)	M L1
1.2.1	Diameter is a line through the centre of the circle that touches the circumference of the circle at two points. $\checkmark \checkmark A$ (Accept any relevant explanation.)	2A correct explanation  (2)	M L1
1.2.2	Difference = $8,04 - 0,9025 \checkmark RT \checkmark MA$ $= 7,1375 \times 100 \checkmark C$ $= 713,75 \text{ mm}^2 \checkmark A$  <b>OR</b>  $0,9025 \times 100 = 90,25 \text{ mm}^2 \checkmark C$ $8,04 \times 100 = 804 \text{ mm}^2 \checkmark C$  Difference = $804 - 90,25 \checkmark M$ $= 713,75 \text{ mm}^2 \checkmark A$	1RT correct values 1MA subtract correct values 1C convert to mm 1A correct answer  2C convert cm to mm  1M subtract correct values 1A correct answer  (4)	M L1

1.2.3	$\% = \frac{0,9025}{8,04} \times 100 \checkmark M$ $= 11,225 \% \checkmark A$	1M multiply by 100  1A correct percentage  NPR (2)	M L1
1.2.4	Mass in kg = $28,25 \div 1\ 000 \checkmark MA$  $= 0,02825 \text{ kg} \checkmark A$	1MA dividing by 1 000 1A answer  (2)	M L1
1.2.5	Radius = $32 \div 2 \checkmark MA$ $= 16 \text{ mm} \checkmark A$	1MA dividing by 2 1A correct radius  (2)	M L1
1.2.6	Weight = $15 \times 28,25 \checkmark MA$  $= 423,75 \text{ g} \checkmark A$	1MA multiplying by 15  1A mass in g  (2)	M L1
1.2.7	Time: $11:15 + 4:50 = 15:65 \checkmark M$  $\checkmark C \checkmark A$ $= 16h05 \text{ minutes}$	1M adding time  1C convert minutes to hrs  1A correct time  (3)	M L1
1.3.1	Dimensions on drawing are portrayed smaller than in real life. $\checkmark \checkmark A$  <p style="text-align: center;"><b>OR</b></p> Dimensions on drawing are portrayed bigger in real life. $\checkmark \checkmark A$	2A correct explanation   (2)	MP L1
1.3.2	Perimeter = sum of all sides  Length C = $8,9 \text{ m} - (2,7 + 1,70 + 1)$ $= 8,9 \text{ m} - 5,4 \text{ m} \checkmark M$ $= 3,5 \text{ m} \checkmark A$	1M add sides and subtract  1A correct answer  (2)	M L1
<b>[31]</b>			



<p>2.2.3</p>	<p>D = Average Speed x Time</p> <p><math>478 = 120 \times T \checkmark</math> SF</p> <p><math>T = \frac{478}{120}</math></p> <p><math>= 3,983333333 \checkmark</math> A</p> <p><math>= 0,9833 \times 60 \checkmark</math> C</p> <p><math>= 58.998 \text{ min OR } 3\text{-}59\text{'00''}</math></p> <p><math>\approx 59 \text{ min} + 3\text{hrs} + 45 \text{ min} + 15 \text{ min} \checkmark</math> M</p> <p><math>\approx 4 \text{ hr } 59 \text{ min} \checkmark</math> S</p> <p>Departure time: 4 hr 30 min + 4 hr 59 min</p> <p>Arrival time: = 08h89 min <math>\checkmark</math> S</p> <p><math>\approx 09\text{h}29 \text{ min} \checkmark</math> CA</p> <p>Yes, they will make it in time. <math>\checkmark</math> J</p>	<p>1SF substitute correct values 1A correct answer</p> <p>1C convert time</p> <p>1M adding time</p> <p>1S simplification</p> <p>1S simplified time</p> <p>1CA arrival time</p> <p>1J conclusion</p> <p>(8)</p>	<p>MP L3</p>
<p>2.2.4 (a)</p>	<p>Distance from Pretoria to Mapungubwe National Park: = 478 km <math>\checkmark</math>CA</p> <p><math>\checkmark</math>M <math>\checkmark</math>M</p> <p>Total litres = <math>\frac{478 \text{ km}}{10 \text{ km}} \times 0,79 = 37,76 \text{ litres} \checkmark</math> A</p>	<p>CA from 2.2.2 1CA correct distance</p> <p>1M multiplying by 0,79 1M dividing by 10 1A correct answer</p> <p>(4)</p>	<p>MP L2</p>
<p>2.2.4 (b)</p>	<p>Cost of petrol: 1 litre = R23,90</p> <p>Cost = R23,90 <math>\times</math> 37,76 <math>\checkmark</math> M</p> <p>= R902,46 <math>\checkmark</math> CA</p> 	<p>CA from Q2.2.4 (a)</p> <p>1M multiply correct values. 1CA correct answer</p> <p>(2)</p>	<p>MP L1</p>
<p><b>[33]</b></p>			

QUESTION 3 [31 MARKS]			
Quest	Solution	Explanation	Level
3.1.1	$\text{Circumference} = 2 \times 3,142 \times \text{radius}$ $\checkmark \text{ SF}$ $= 2 \times 3,142 \times 14 \checkmark \text{ C}$ $= 87,976 \text{ cm} \checkmark \text{ MA}$	1SF for radius value 14 1C correct values 1MA correct answer (3)	M L2
3.1.2	$\text{Volume} = 3,142 \times r^2 \times h$ $\checkmark \text{ SF}$ $3\,079,16 \text{ cm}^3 = 3,142 \times 14 \times 14 \times \text{height} \checkmark \text{ M} \checkmark \text{ C}$ $\text{Height (H)} = 3\,079,16 \text{ cm}^3 \div 615,832 \text{ cm}^2 \checkmark \text{ MA}$ $= 5 \text{ cm} \checkmark \text{ CA}$	1M finding radius of 140 mm. 1C convert 140 mm to cm 1SF for radius value 14 1MA divide by area of cylinder baking pan 1CA correct answer (5)	M L3
3.1.3	$^{\circ}\text{C} = (^{\circ}\text{F} - 32) \div 1,8$ $= (430 - 32) \div 1,8 \checkmark \text{ SF}$ $= 398 \div 1,8 \checkmark \text{ S}$ $= 221,11 \text{ }^{\circ}\text{C} \checkmark \text{ A}$	1SF correct substitution 1S simplification 1A correct answer (3)	M L2
3.2.1	1 g of sugar = 4 calories $A = \frac{57,3 \times 4}{1} \checkmark \text{ MA}$ $= 229,2 \text{ calories} \checkmark \text{ A}$ $B = \frac{169,2 \times 1}{4} \checkmark \text{ MA}$ $= 42,3 \text{ grams} \checkmark \text{ A}$	1MA finding value A 1A correct answer 1MA finding value B 1A correct answer (4)	M L2
3.2.2	$\text{Total amount in sugar} = 57,3 \text{ g} \times 3 \checkmark \text{ MA}$ $= 171,9 \text{ grams} \checkmark \text{ MA}$	1MA multiply 57,3 by 3 1MA correct answer (2)	M L1


3.2.3	<p>Daily consumption sugar intake:</p> <p>Vitamin water = <math>5,5 \times 2</math> = 11 g ✓MA</p> <p>Per week = <math>11 \times 7</math> ✓M = 77 + 20 g  = 97 g ✓ CA</p> <p>% Sugar intake = <math>\frac{97 \text{ g}}{171,9 \text{ g}} \times 100 = 56,4\%</math> ✓M ✓ C</p> <p>Her statement is valid. ✓J</p>	<p><b>CA from 3.2.2</b></p> <p>1MA correct value 1M finding weekly intake</p> <p>1CA correct answer</p> <p>1M finding percentage 1CA correct answer</p> <p>1J justification</p> <p>(6)</p>	M L4
3.2.4	<p><math>2 \times 35 \text{ g} = 70 \text{ g}</math> ✓MA</p> <p>1 year = <math>70 \times 365</math> ✓M    <math>(70 \times 366) \div 1\,000</math> = 25 550 g ÷ 1 000 ✓C = 25,55 kg <b>OR</b> 25,62 kg ✓CA</p>	<p>1MA divide by 4 g</p> <p>1M multiply by 365 or 366 1C convert gram to kg 1CA correct answer</p> <p>(4)</p>	M L2
3.2.5	<p>She must look for ‘unsweetened products’. ✓✓ R</p> <p>Consume more healthy fats. ✓✓ R</p> <p style="text-align: center;"><b>OR</b></p> <p>She should change her daily drinks to a bottle of vitamin water. ✓✓ R</p>	<p>2R reason 1</p> <p>2R reason 2</p> <p>(4)</p>	M L4
<b>[31]</b>			



QUESTION 4 [34 MARKS]			
Quest	Solution	Explanation	Level
4.1.1	There is no wall separating the kitchen and living room ✓✓	2A correct explanation (2)	MP L1
4.1.2	2 and 3 ✓✓ A	2A correct explanation (2)	MP L1
4.1.3	South ✓✓ RT	2RT correct answer (2)	MP L2
4.1.4	11 ✓✓ RT	2RT correct answer (2)	MP L1
4.2.1	<p>Total length in feet = 14 + 12</p> <p style="text-align: center;">= 26 feet</p> <p>Total length in inches = 5 + 2 ✓</p> <p style="text-align: center;">= 7</p> <p>Feet to cm = 26 × 30,48 ✓</p> <p style="text-align: center;">= 792,48</p> <p>To m = 792,48 ÷ 100</p> <p style="text-align: center;">= 7,9248 ✓</p> <p>Inches to m = 7 × 0,0254</p> <p style="text-align: center;">= 0,1778 ✓</p> <p>Total length = 7,9248 + 0,1778 ✓</p> <p style="text-align: center;">= 8,1 m ✓</p>	<p>1A total length in feet and inches</p> <p>1M converting feet</p> <p>1 CA length in metres</p> <p>1 MA length from inches to metres</p> <p>1M adding values</p> <p>1 CA answer</p> <p style="text-align: right;">(6)</p>	MP L3

4.2.2	<p>Bedroom 2 length = <math>14 \times 30,48</math></p> <p style="padding-left: 40px;"><math>= 426,72 \div 100</math></p> <p style="padding-left: 40px;"><math>= 4,2672 \checkmark</math></p> <p>Inches = <math>5 \times 0,0254</math></p> <p style="padding-left: 40px;"><math>= 0,127</math></p> <p>Total = <math>4,3942\text{m} \checkmark</math></p> <p>Width = <math>10 \times 30,48</math></p> <p style="padding-left: 40px;"><math>= 304,8 \div 100</math></p> <p style="padding-left: 40px;"><math>= 3,048 \text{ m}</math></p> <p>Inches = <math>9 \times 0,0254</math></p> <p style="padding-left: 40px;"><math>= 0,2286</math></p> <p>Total = <math>3,048 + 0,2286</math></p> <p style="padding-left: 40px;"><math>= 3,2766 \checkmark</math></p> <p>Area = length x width</p> <p style="padding-left: 40px;"><math>= 4,3942 \times 3,2766 \checkmark</math></p> <p style="padding-left: 40px;"><math>= 14,398 \text{ m}^2 \checkmark</math></p> <p>Litres paint = <math>14,398 \div 6 \checkmark</math></p> <p style="padding-left: 40px;"><math>= 2,399 \text{ litres} \checkmark</math></p> <p>Statement valid <math>\checkmark</math></p>	<p>1 A length in metres</p> <p>1 CA total length</p> <p>1 CA total width</p> <p>1 M calculating area</p> <p>1 CA area</p> <p>1M dividing by 6</p> <p>1CA no of litres</p> <p>1O Statement valid</p>	<p>M L4</p> <p>(8)</p>
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4.3.1	<p>Length of one side = <math>\sqrt{2025 \text{ cm}^2}</math> ✓ M</p> <p style="text-align: center;"><math>S = 45 \text{ cm}</math> ✓ A</p> <p>Perimeter = Side <math>\times</math> 4  <math>= 45 \text{ cm} \times 4</math> ✓ SF  <math>= 180 \text{ cm}</math> ✓ MA</p> <p>Conversion = <math>180 \text{ cm} \div 100</math>  <math>= 1,8 \text{ m}</math> ✓ C</p> <p>Her statement is valid ✓ O</p>	<p>1M finding one side 1A correct answer</p> <p>1SF substitute correct values 1MA for 180 cm</p> <p>1C convert to cm</p> <p>1O justification</p> <p style="text-align: right;">(6)</p>	M L3
4.3.2	<p>Length of fabric = 270 cm</p> <p>Number of cushions = <math>270 \div 45 \text{ cm}</math> ✓ MCA  <math>= 6</math> ✓ CA</p> <p>Width of fabric = 180 cm          Number of cushions = <math>180 \div 45 \text{ cm}</math>  <math>= 4</math> ✓ CA</p> <p>Cushions faces = <math>6 \times 4</math> ✓ S  <math>= 24</math> ✓</p> <p>Total cushions faces = <math>24 \div 2</math>  <math>= 12</math> ✓ CA</p>	<p><b>CA cushion length from 4.3.1</b></p> <p>1MCA dividing fabric by 45 cm</p> <p>1CA correct value 1CA correct value 1S simplify</p> <p>1CA total number of cushions</p> <p style="text-align: right;">(6)</p>	M L3
		<b>[34]</b>	

QUESTION 5 [21 MARKS]			
Quest	Solution	Explanation	Level
5.1.1	Width of car = $1\,860 \div 1\,000$ ✓C $= 1,86$ m Remaining space = $3,5 - 1,86$ ✓M $= 1,64$ Space on both sides = $1,64 \div 2$ ✓M $= 0,82$ m ✓CA Statement is valid ✓O	1C mm to m 1 M subtraction 1 M dividing by 2 1 CA answer 1 O statement valid (5)	M L4
5.1.2	$P(\text{Grey SUV}) = \frac{5}{20}$ ✓ ✓ M $= 0,25$ ✓ A	2M for correct numerator and denominator 1A correct answer (3)	P L2
5.1.3	$\text{Probability}_{(\text{non-metallic})} = (11 \div 20) \times 100\%$ ✓ A ✓ M $= 55\%$ ✓ CA ✓ A $\therefore$ It is less than 56%. ✓ O <b>OR True OR valid.</b>	1A correct fraction 1M percentage 1CA answer 1O conclusion (4)	P L4
5.2.1	Length of Model $= 482,5 \text{ cm} \div 8$ ✓M $= 60,3125 \text{ cm}$ ✓A  Width of Model $= 186 \text{ cm} \div 8$ ✓M $= 23,25 \text{ cm}$ ✓A Area of Model $= 60,3125 \times 23,25$ $= 1\,402,265625 \text{ cm}^2$ ✓CA 35% of table area = $\frac{35}{100} \times 3\,716,1216 \text{ cm}^2$ ✓M $= 1\,300,64256 \text{ cm}^2$ ✓CA The scale of 1 : 8 will not be suitable ✓O	1M divide by 8 1A correct answers 1M divide by 8 1A correct answer 1M finding area 1CA correct answer 1M finding table area 1CA correct answer 1O reason (9)	MP L4
		[21]	
		<b>TOTAL: 150</b>	