NATIONAL SENIOR CERTIFICATE

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF
EDUCATION

GRADE 12

MATHEMATICAL LITERACY P2

JUNE 2025

MARKS: 100

TIME: 2 hours

NSC

This question paper consists of 12 pages and an addendum with 3 annexures.

INSTRUCTIONS AND INFORMATION

1. This question paper consists of FOUR questions. Answer ALL the questions.
2. Use the ANNEXURE in the ADDENDUM to answer the following questions:
   - ANNEXURES A for QUESTION 1.2
   - ANNEXURES A for QUESTION 2.1 and 2.2
   - ANNEXURES A for QUESTION 4.2
3. Number the answers correctly according to the numbering system used in this question paper.
4. Start EACH question on a NEW page.
5. You may use an approved calculator (non-programmable and non-graphical), unless stated otherwise.
6. Show ALL calculations clearly.
7. Round off ALL final answers appropriately according to the given context, unless stated otherwise.
8. Indicate units of measurement, where applicable.
9. Maps and diagrams are NOT drawn to scale, unless stated otherwise.
10. Write neatly and legibly.

NSC

QUESTION 1 (20 MARKS)

1.1 In TABLE 1 below is a list of explanations and definitions of concepts used in Mathematical Literacy.

Table 1: EXPLANATIONS AND DEFINITIONS OF CONCEPTS

A	Something that may or may not happen when an action is performed.
B	The area of all the faces of an object added together.
C	A system of measurement that uses metres, litres, kilograms etc.
D	A map of a section of a travelling route.
E	The likelihood of something happening or not happening
F	A system of measurement that uses inches, pounds, feet, gallons and miles
G	The amount of two-dimensional space occupied by a 2-D shape
H	Graphs consisting of a series of percentile curves that show the distribution of the growth measurement of children.
I	A map of a small area such as a town or city

Use Table 1 above and match an explanation or a definition of EACH of the concepts below. Write only letters (A to I) next to the question number e.g. 1.1.2 G.

1.1.1 Street map (2)

1.1.2 Event (2)

1.1.3 Metric system (2)

1.1.4 Surface Area (2)

1.1.5 Growth chart (2)

1.2 The mall of the North is one of the largest shopping centres in Polokwane, Limpopo, South Africa. Use annexure A to answer the questions that follow:

1.2.1 Name two banks found on this level of The Mall of the North. (2)

1.2.2 Indicate the number of Escalators found on this map. (2)

1.2.3 Determine the shop number for Checkers. (2)

1.2.4 Identify the name of the entrance on this map. (2)

1.3 Picture of a rectangular box (2)

[source www.bing.com]

Which of the following formulae is used to calculate the surface area of the above picture?

A. L x B x H
B. 2(L x B) + (L x H) + (W x H)
C. 2(L x B) + 2(L x H) + 2(W x H)

[20]

QUESTION 2 (25 MARKS)

2.1

Mikael and his friend travelled from Johannesburg to Kruger National park via N12 and N4, distance of approximately 392 km. Upon arrival they were given a booklet containing maps and information pertaining to the Kruger National park. Annexure B is the map of Kruger National park

Study the map on ANNEXURE B to answer the questions that follow.

2.1.1 Convert 392 km to miles.

*** Note 1mile = 1,609 km** (2

2.1.2 Measure the distance between Letaba and Satara to determine the scale of the map (The actual distance between Letaba and Satara is 69 km). Write your answer in the form of 1: ……. (Round your answer to the nearest whole number) (4)

2.1.3 Their vehicle's petrol consumption is 8,6*l* per 100 km and fuel cost R20,34 per litre. Mikael's friend said that it will cost them exactly R900 to drive from Johannesburg to Kruger National Park. Prove with calculations if she is correct. (5)

2.2 Table 1 below shows information between some of the main Kruger National Park camps and Gates. The maximum speed limit is 50 km/h on tar and 40km/h on sand. This is to protect the wildlife that often wander into the roads. There are traffic officers in the Park!

TABLE 1 Distances about some of the main Kruger National Park camps and gates
Distance (km) / Travelling time (hh:mm)

	Satara	Phalaborwa Gate	Orpen	Olifants	Mopani	Malelane	Lower Sabie	Letaba
Letaba	69 / 02:45	51 / 02:00	117 / 04:40	32 / 01:20	47 / 01:55	226 / 09:00	162 / 06:30	0
Lower Sabie	93 / 03:45	213 / 08:30	141 / 05:40	147 / 05:55	209 / 08:20	105 / 04:10	0	162 / 06:30
Malelane	156 / 06:15	277 / 11:05	204 / 08:10	210 / 08:25	272 / 10:55	0	105 / 04:10	226 / 09:00
Mopani	116 / 04:40	74 / 03:00	164 / 06:35	86 / 03:25	0	272 / 10:55	209 / 08:20	47 / 01:55
Olifants	54 / 02:10	83 / 03:20	102 / 04:05	0	86 / 03:25	210 / 08:25	147 / 05:55	32 / 01:20
Orpen	48 / 01:55	167 / 06:40	0	102 / 04:05	164 / 06:35	204 / 08:10	141 / 05:40	117 / 04:40
Phalaborwa Gate	119 / 04:45	0	167 / 06:40	83 / 03:20	74 / 03:00	277 / 11:05	213 / 08:30	51 / 02:00
Satara	0	119 / 04:45	48 / 01:55	54 / 02:10	116 / 04:40	156 / 06:15	93 / 03:45	69 / 02:45

[Adapted from www.hluhluwegamereserve.co]

Use Annexure B and table 1 above to answer the questions that follows:

2.2.1 According to **table 1**, it takes 4 hours and 45 minutes to travel from Satara Camp to Phalaborwa Gate. Convert 4 hours and 45 minutes to hours. Show calculations. (3)

2.2.2 While having tea one afternoon during their holiday at Olifants Camp, Mikael realized that they need to return to Letaba Camp to spend their night. They left Olifants Camp at 17:30, he indicated that they will make it on time sticking to the speed limit using a tar road. Verify if his statement is VALID. (6)

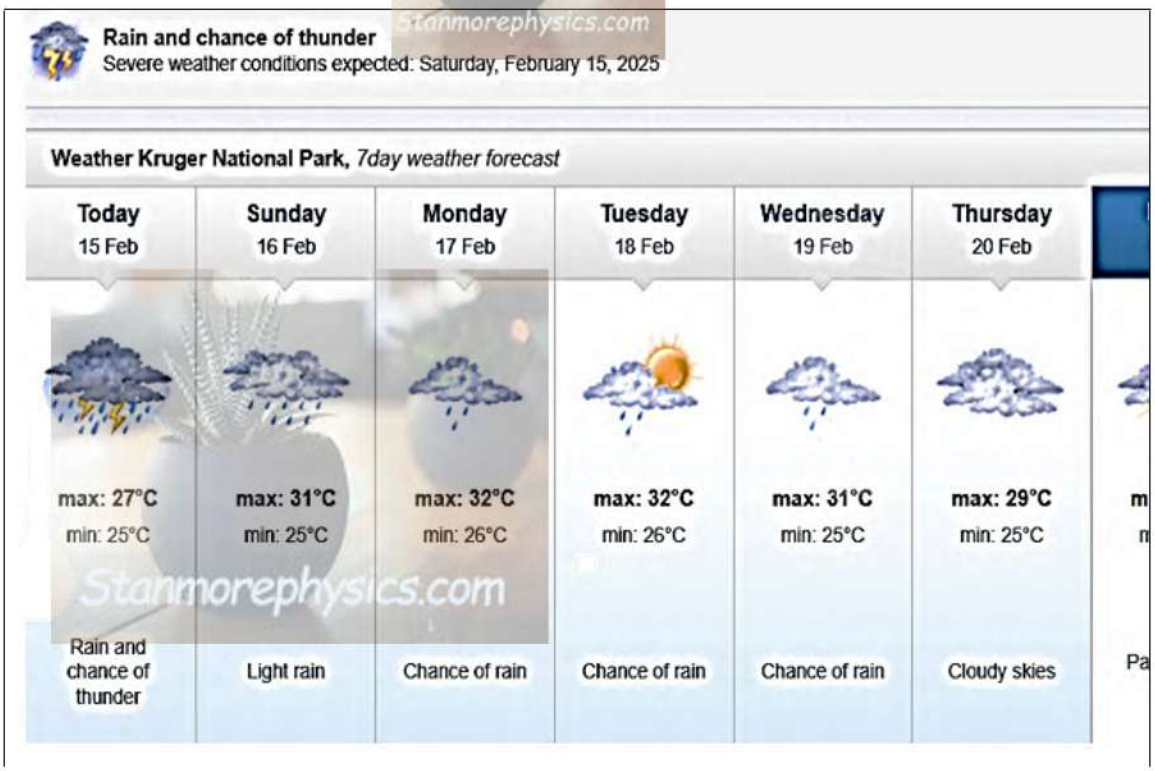
You may use the following formula:

Distance = Speed × Time

***Note closing time November to February is 6:30**

2.3 On arrival to Kruger National Park they were also given a weather forecast brochure for 7 days in February 2025 as per table 2 below.

Picture of Kruger National park weather forecast



[source:freemeteo.co.za]

Use the Picture above and table 2 to answer the following questions:

2.3.1 Indicate the day on which there is a likelihood of thunder. (2)

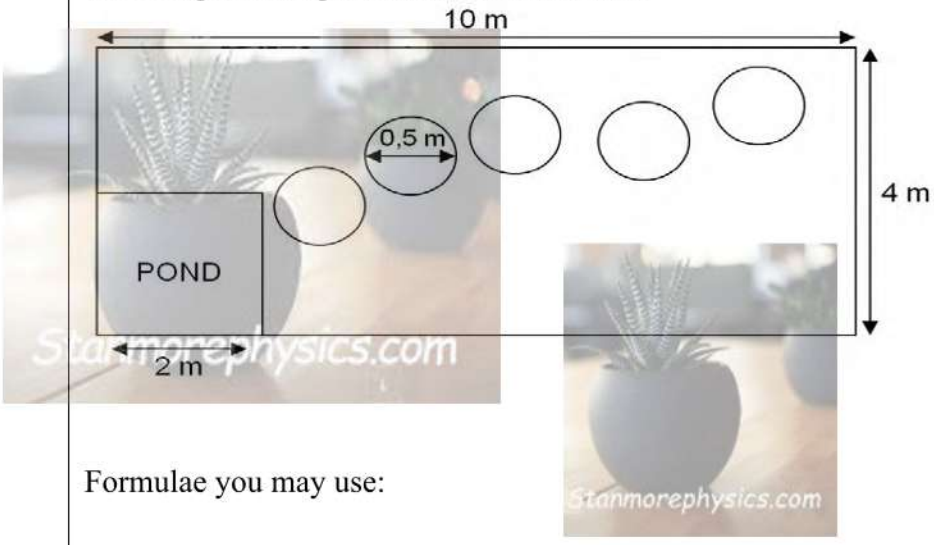
2.3.2 Determine the probability that the maximum temperature is above 30°C? Write your answer as decimal rounded to three decimal place. (3)

[25]

QUESTION 3 (33 MARKS)

The Matric class of 2025 of Ephphatha School are designing a new rectangular garden as part of the Green Schools project. The garden will consist of a square pond at one end, and circular stone tiles forming a walkway to the pond. The area surrounding the pond and walkway will be grassed.

The design of the garden is indicated below:



Formulae you may use:

Area of circle = $\pi \times r^2$ where r = radius and $\pi = 3{,}142$

Area of square = S × S where S = side

Volume = L × B × H where L= Length, H = Height and B = Breadth

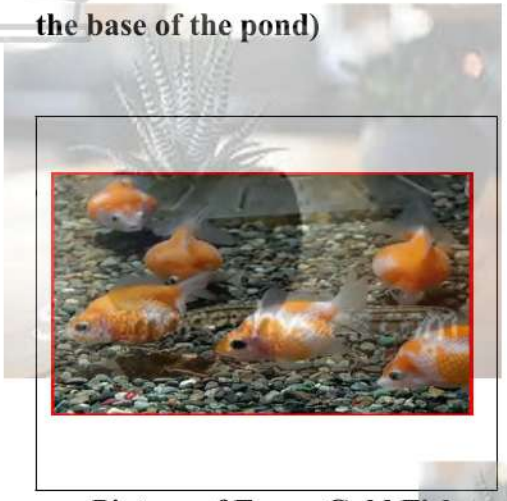
3.1 The grade 12 committee needs to order the stone tiles and grass for the garden.

3.1.1 Calculate the area that one circular stone tile will cover. (3)

3.1.2 Calculate the number of square metres of grass that will need to be ordered from the local nursery for the garden. (8)

3.1.3 If the cost of grass is R45 per m^2 calculate the cost of the grass for the new garden. **(The grass is sold in square metres)** (2)

3.2 The pond at the bottom of the garden will be filled with Fancy Gold Fish. Most fancies do well with a temperature range of 64°F to 74°F. According to the local fish shop the pond should be at least 130 cm deep. (**Note: Refer to 3.1 above for the dimensions of the base of the pond)**



Picture of Fancy Gold Fish

3.2.1 Calculate the volume of the pond in cubic metres (m^3) (3)

You may use

Volume = S × S × H where S = Side and H = Height

3.2.2 If 1 m^3 = 1 000 litres, how much water will be needed to fill the pond to 90% of its capacity? (4)

3.2.3 The local fish shop recommends that for every 200 litres of water you have two Fancy gold fish. What is the maximum number of fish that may be ordered for the pond? (4)

3.2.4 Waterproofing paint will be needed to paint the interior of the fish pond. If 1 litre of paint covers 3 m^2, how many litres will be needed to waterproof the pond if the pond needs two coats of paint. (6)

3.2.5 Convert the maximum temperature for Fancy gold fish to degrees Celsius. (3)

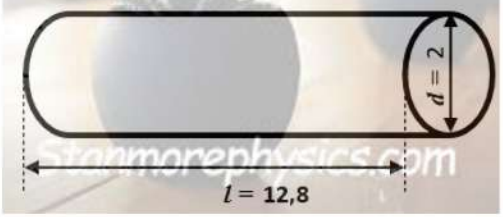
You may use the formula: **°C = (°F – 32) ÷ 1,8**

[33]

QUESTION 4 (22 MARKS)

4.1 Sign bought a 34 000ℓ oil tanker with length of 12,8 m and a diameter of 2 m which is used for oil transportation the harbour to Polokwane.

Sketch and dimensions of a tank in metres



l = **length in m**

d = **diameter in m**

Picture of an oil tanker trailer

Picture of a barrel of Oil and information

- 1 barrel = 42 US gallons
- 1 litre = 0.064172 US gallons

[source from www.bing.com]

Use the above information to answer the following questions:

4.1.1 Calculate, in litres, the amount of oil one barrel can hold. Round your answer to the nearest litre. (3)

4.1.2 The salesman told Sign that the tanker can hold 65 barrels of oil. Verify, showing all calculations that he is correct. (3)

4.1.3 The tanker was sprayed to renew it. Determine the surface area in m^2 that was sprayed. (5)

You may use the formula:
Surface area = $(2 \times \pi \times r^2) + (2 \times \pi \times r \times l)$
Use $\pi = 3{,}142$

4.2	Sign and his friend Smile also own a house construction company, **Annexure C** is a floor plan of one of the houses they built in an enclosed area called Tzangeni. Use annexure C to answer the questions that follow:		
	4.2.1	Write, as the ratio of the number of double doors to the number of single doors.	(2)
	4.2.2	Determine the direction of bedroom 3 from the kitchen.	(2)
	4.2.3	Are the bedrooms in this plan En-suites? Write **True** or **False** and give a reason for your answer.	(3)
	4.2.4	What is the shape of bedroom 2?	(2)
	4.2.5	Convert the length of the Eastern wall, 13'- 6" to metres **Note: 1 inch = 2,54 cm** **1 foot = 0,3048 m**	(4)
			[22]
		TOTAL : 100	

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF
EDUCATION

NATIONAL SENIOR CERTIFICATE

GRADE 12

MATHEMATICAL LITERACY P2

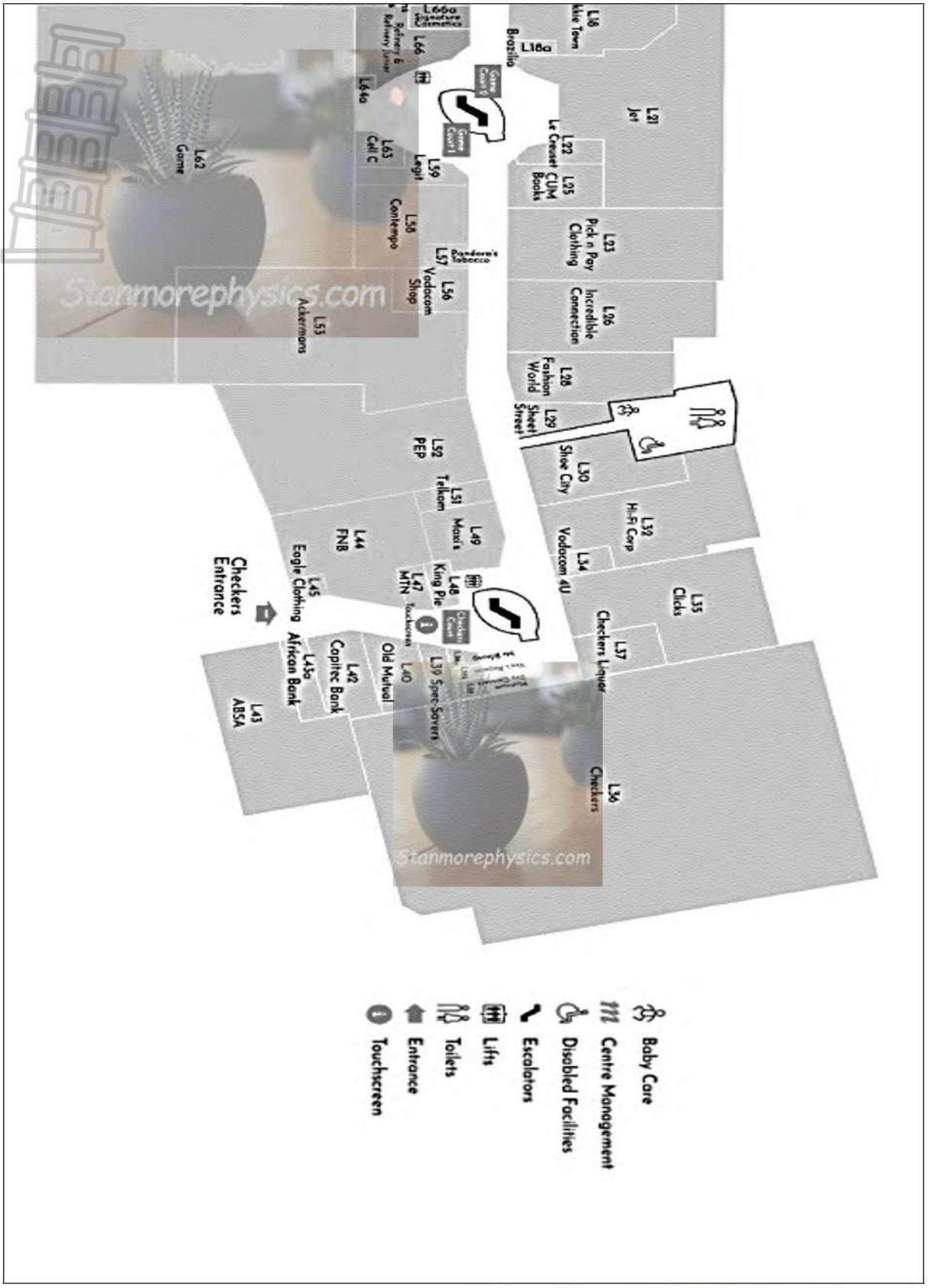
ADDENDUM

JUNE 2025

This addendum consists of 4 pages and 3 Annexures.

ANNEXURE A: QUESTION 1.2

PICTURE OF THE MALL OF THE NORTH

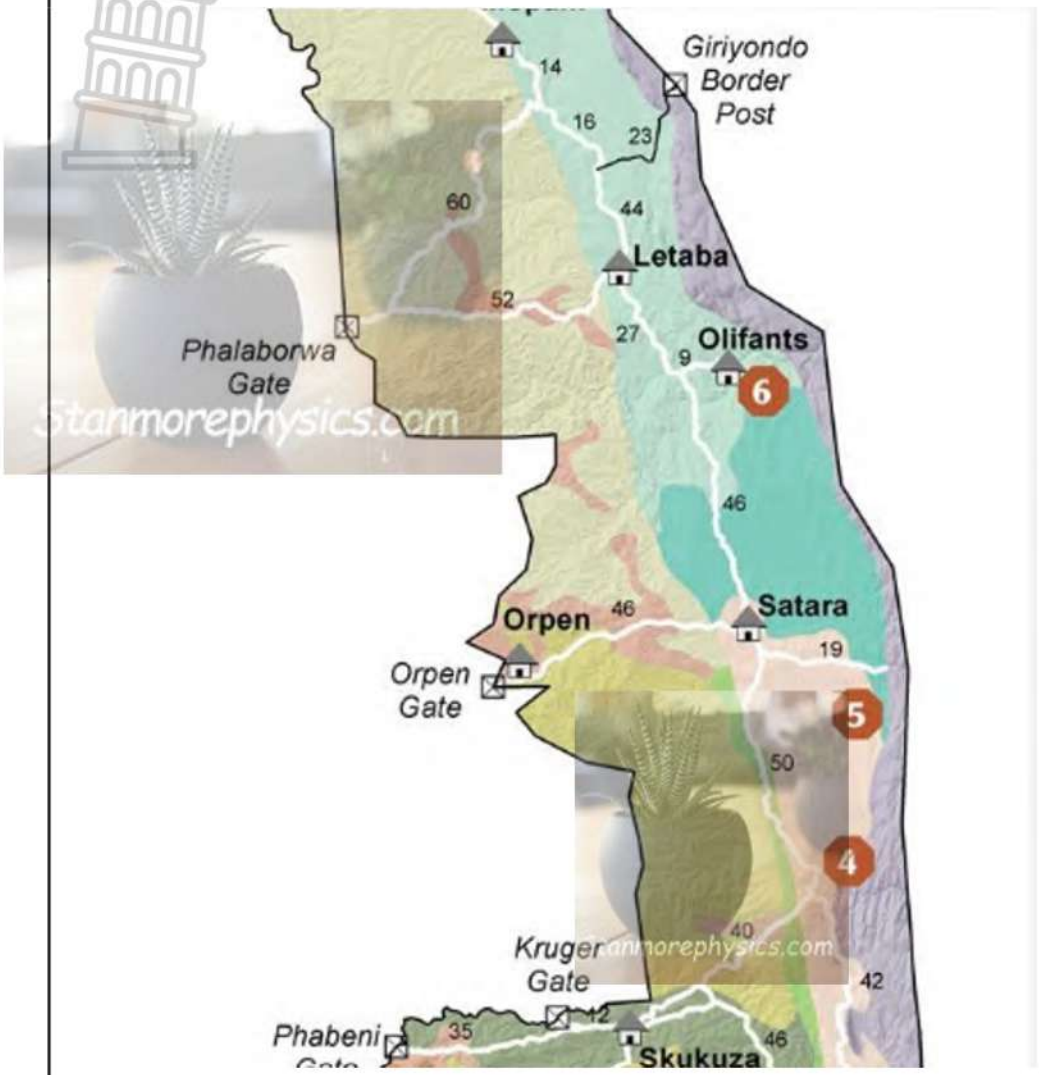


[Adapted from www.mallofthenorth.co.za]

ANNEXURE B

QUESTION 2.1 AND 2.2

THE KRUGER NATIONAL PARK MAP

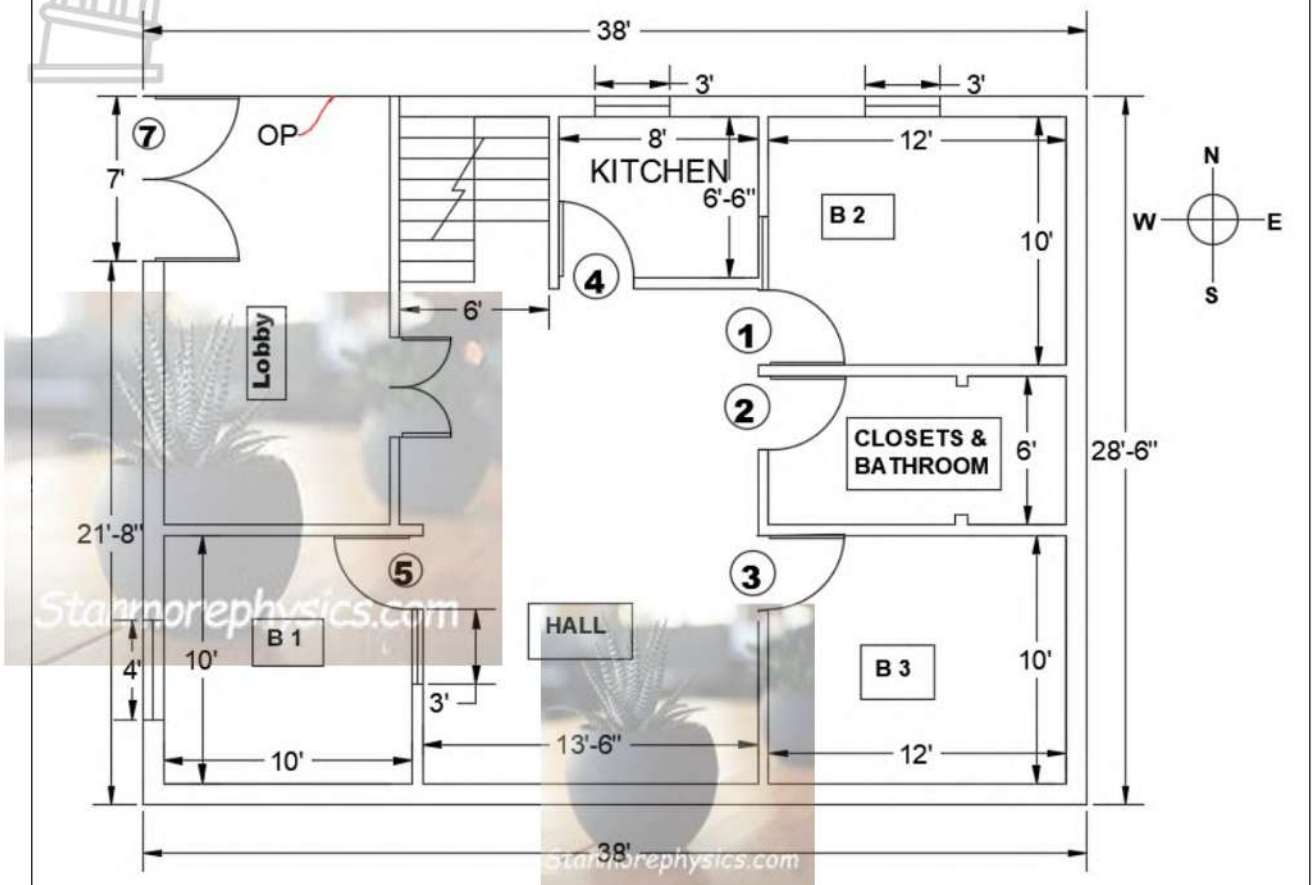


[Adapted from www.bing.com]

ANNEXURE C

QUESTION 4.2

FLOOR PLAN OF SIGN AND SMILE'S CONSTRUCTION HOUSES



[source from www.australian floorplans.com]

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF
EDUCATION

GRADE/*GRAAD* 12

MATHEMATICAL LITERACY P2

JUNE EXAMINATION 2025

CORRECTED VERSION OF THE MARKING GUIDELINE

MARKS/*PUNTE*: 100

Symbol/	Explanation
M	Method
MA	Method with accuracy
CA	Consistent accuracy
A	Accuracy
C	Conversion
S	Simplification
RT	Reading from a table/graph/document/diagram
SF	Correct substitution in a formula
O	Opinion/Explanation
P	Penalty, e.g. for no units, incorrect rounding off, etc..
R	Rounding off
NPR	No penalty for rounding
AO	Answer only
MCA	Method with consistent accuracy
RCA	Rounding consistent with accuracy

This marking guideline consists of 8 pages

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 item presented.

QUESTION 1 [20 MARKS]			
Q	**Solution**	**Explanation**	**T&L**
1.1.1	I ✓✓ A	2A explanation (2)	MP L1
1.1.2	A ✓✓ A	2A explanation (2)	P L1
1.1.3	C ✓✓ A	2A explanation (2)	M L1
1.1.4	B ✓✓ A	2A explanation (2)	M L1
1.1.5	H ✓✓ A	2A explanation (2)	P L1
1.2.1	ABSA, African Bank, Capitec ✓✓ A **FNB, Old Mutual Bank**	2 A correct answer (any two banks) (2)	MP L1
1.2.2	2 ✓✓ A	2 A correct number (2)	MP L1
1.2.3	L36 ✓✓ A	2 A correct number (2)	MP L1
1.2.4	Checkers Entrance ✓✓ A	2 A correct entrance (2)	MP L1
1.3	C ✓✓ A	2 A correct formula (2)	M L1
		TOTAL : [20]	

QUESTION 2 [29 MARKS]			
Quest	**Solution**	**Explanation**	**T & L**
2.1.1	Number of miles = $\frac{392\ km}{1{,}609\ km}$ / miles ✓ C = 243,629… = 243,6 miles ✓ CA	1 C converting to miles 1CA number of miles (2) **NPR**	MP L1
2.1.2	Measured distance= 5cm ✓ A 5 cm = 69 km ✓ M 5 cm = 69 km × **100 000** ✓ C 5 cm = **6 900 000** cm 1: **1 380 000** ✓ CA **OR** Measured distance = 50mm ✓ A 50 mm = 69 km ✓ M 50 mm = 69 km × **1 000 000** ✓ C 50 mm = 69 000 000 mm 1: **1 380 000** ✓ CA	1A measured distance 1M concept ratio 1C conversion 1CA correct answer **(Range 4,9 – 5,1)** 1A measured distance 1M concept ratio 1C conversion 1CA correct answer **(Range 49 – 51)** (4)	MP L2

2.1.3	8,6 litres = 100 km Fuel consumption = $\frac{392\ km}{100\ km}$ × 8,6 litres ✓M = 3,92 × 8,6 litres = 33,712 litres ✓S Fuel cost = R20,34 × 33,712 litres ✓MA = R685,70208 = R 685,70 ✓CA ∴ Not correct O ✓	1M concept ratio 1S simplification 1MA multiply by the amount 1CA answer 1O Verification (5)	MP L4
2.2.1.	Hours = $\frac{45}{60}$ ✓MA = 0,75 hrs ✓C = 4 hrs + 0,75 hrs = 4,75 hrs ✓CA OR Hours = (4 × 60min + 45 min)✓C ÷ 60 min ✓MA = 4,75 hrs ✓CA	1MA dividing by 60 1C conversion 1 CA answer 1C Converting hours 1MA dividing by 60 1CA simplification (3)	MP L2
2.2.2	D = S × T 32km = 50km/h × T ✓SF T = $\frac{32km}{50km/h}$ ✓S = 0,64 hrs ✓CA = 0,64 hrs × 60 = 0 hrs 38,4 min ✓C Arrival time = **17:30** + 0 hrs 38,4 min = **18:08** ✓CA ∴ His statement is VALID, they will arrive on time ✓O	1SF substitution with correct values 1S changing subject of the formula 1CA time in hours 1C converting hours to minutes 1CA arrival time 1O Verification (6)	MP L4

2.3.1	Saturday ✓✓A	1A correct answer (2)	MP L1
2.3.2	$P = \frac{5}{7}$ ✓✓A = 0,71428 … = 0,714 ✓R	1A Numerator 1A Denominator 1R answer (3)	MP L2
		[25]	

QUESTION 3 (33 MARKS)

Q	SOLUTION	EXPLANATION	T&L
3.1.1	$A = \pi r^2$ ✓A $= 3,142 \times (\frac{0,5\ m}{2})^2$ ✓SF $= 0,196375\ m^2$ ✓CA	1A for radius 1SF correct substitution 1CA correct answer (3)	M L2
3.1.2	Area of the Garden = L × b = 10 m × 4 m ✓SF = 40 m^2 ✓A Area of circular stones = 0,196375 m^2 × 5 = 0,981875 m^2 ✓CA Area of the pond = s^2 = $(2)^2$ ✓SF = 4 m^2 ✓CA Area of grass = 40 m^2 – (0,981875 m^2 + 4 m^2) ✓MCA = 35,018125 m^2 ✓CA = 36 m^2 ✓R	**CA from 3.1.1** 1SF correct substitution 1A simplification 1CA simplification 1SF correct substitution 1CA simplification 1MCA subtraction 1CA total area of grass 1R rounding (8)	M L3
3.1.3	Cost of grass = 36 m^2 × R45 ✓MCA = R1620 ✓CA	**CA From 3.1.2** MCA multiply by 45 1CA simplification (2)	M L1

3.2.1	Volume = S × S × H ✓C = 2 m × 2 m × 1,3 m ✓SF = 5,2 m^3 ✓CA	1C conversion to m 1SF correct substitution 1CA volume (3) **NPR**	M L3
3.2.2	Volume of tank = 5,2 × 1000 ℓ ✓C = 5200 ℓ ✓CA Water required = 5200 ℓ × 90% ✓M = 4680 ℓ ✓CA	**CA from 3.2.1** 1C converting to litres 1CA volume of tank 1M multiplying by 90% 1CA simplification (4)	M L3
3.2.3	Maximum number of fish = 4680 ℓ ÷ 200 ℓ ✓M = 23,4 × 2 ✓M = 46,8 ✓CA = 46 fish ✓R	**CA from 3.2.3** 1M dividing by 200 1M multiplying by 2 1CA number of fish 1R rounding up (4)	M L2
3.2.4	TSA = (L × B) + 2 (L×H) + 2 (B×H) = (2m × 2m) + 2(2m ×1,3m) +2 (2m ×1,3m) ✓SF = 14,4 m^2 ✓CA = 14,4 m^2 × 2 ✓MCA = 28,8 m^2 ✓CA = 28,8 m^2 ÷ 3 ✓MCA = 9,6 ℓ ✓CA	1SF correct substitution 1 CA surface area 1 MCA multiplying by 2 1 CA doubled area 1M dividing by 3 1CA answer (6)	M L3
3.2.5	°C = (°F – 32) ÷ 1,8 ✓ RT = (74°F – 32) ÷ 1,8 ✓SF = 23,3 °C ✓CA	1RT value 74 1SF substitution 1CA simplification (3) **NPR**	M L2
		[33]	

QUESTION 4 [22 MARKS]			
Q	**Solution**	**Explanation**	**T /L**
4.1.1	Gallons to litres = $\frac{42}{0,064172}$ ✓A = 654,4910…✓S = 654 ℓ ✓R	1A using ratio 1S simplification 1R rounding (3)	M L2
4.1.2	No of barrels = $\frac{34\ 000}{654}$ ✓RT = 51,98776758 = 51 barrels ✓CA ∴Not correct ✓O OR 1 barrel = 42 US gallons Tank capacity = 34 000 litres 1 litre = 0,064172 gallons 1 gallon = 15,583120364 litres Number of gallons = $\frac{34\ 000\ l}{15,583120364\ l}$ = 2 181,848 Number of barrels = $\frac{2\ 181,848}{42}$ = 51,94876…. = 51	**CA from 4.1.1** 1RT for 34 000 1CA no of barrels 1O for verification **AO** (3)	M L4
4.1.3	R = 2 ÷ 2 = 1 ✓A TSA ✓SF ✓SF = (2 × 3,142×$(1m)^2$) + (2 × 3,142 × 1m × 12,8 m) = 6,284 m^2 + 80,4352 m^2 ✓M = 86,7192 m^2 ✓CA	1A radius 2SF substitution 1M addition of areas 1CA simplification (5)	M L3

4.2.1	Double door: single doors 2: 5 ✓RT ✓A	1 RT correct values 1 A correct order (2)	MP L1
4.2.2	South East / SE ✓✓ A	2 A correct direction (2)	MP L2
4.2.3	✓ A False, an en-suite is when a bathroom and a bedroom are connected and the bathroom can only be accessed through the bedroom and no other space. The bathrooms are not connected to the bedrooms. ✓✓ O	1 A for false 2 O justification (3)	MP L4
4.2.4	**Rectangle** ✓✓A	2 A correct shape (2)	M L1

	DO NOT MARK	**DO NOT MARK**	
	THIS QUESTION SHOULD BE MARKED OUT OF 20 MARKS, THEN SCALED UP TO 22 MARKS.		
		[22]	
		TOTAL :100	

ADDITIONAL NOTES

	QUESTION 1		
1.1.1 TO 1.1.5	If a learner has written the full correct statement, in state of a letter.	FULL MARKS	
1.2.3	36 only	ONE MARK	
1.2.3	L35	NO MARK	
1.3	If a learner has written the full correct formula, in state of a letter.	FULL MARKS	
	QUESTION 2		
2.3.1	Today OR 15 February 2025	NO MARK	