education

MPUMALANGA PROVINCE
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

MATHEMATICAL LITERACY P2

SEPTEMBER 2026

MARKS: 150

TIME: 3 HOURS

This question paper consists of 14 pages and an 18-page SPECIAL ANSWER BOOK.

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INSTRUCTIONS AND INFORMATION

1. This question paper consists of **FIVE** questions. Answer **ALL** the questions.
2. Answer ALL the questions ONLY in the SPECIAL ANSWER BOOK provided.
3. You may use an approved calculator (non-programmable and non-graphical), unless stated otherwise.
4. Show ALL calculations clearly.
5. Round off ALL final answers appropriately according to the given context, unless stated otherwise.
6. Indicate units of measurement, where applicable.
7. Maps and diagrams are NOT necessarily drawn to scale, unless stated otherwise.
8. Write neatly and legibly.

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QUESTION 1

1.1 Maps and plans may use a scale to show the proportion between the measurement on the paper and the actual measurement.

1.1.1 In a scale of 1: 200 000, what does the 200 000 represents. (2)

1.1.2 Identify the type of scale that increases or decreases with a map when it is resized. (2)

1.2 TABLE 1 below contains a list of Mathematical Literacy terms or concepts in COLUMN A with descriptions in COLUMN B.

Choose a description from COLUMN B that matches the term or concept in COLUMN A. Write only the letter (A – K) next to the question numbers (1.2.1 to 1.2.6) In the ANSWER BOOK, e.g. 1.2.6 Z

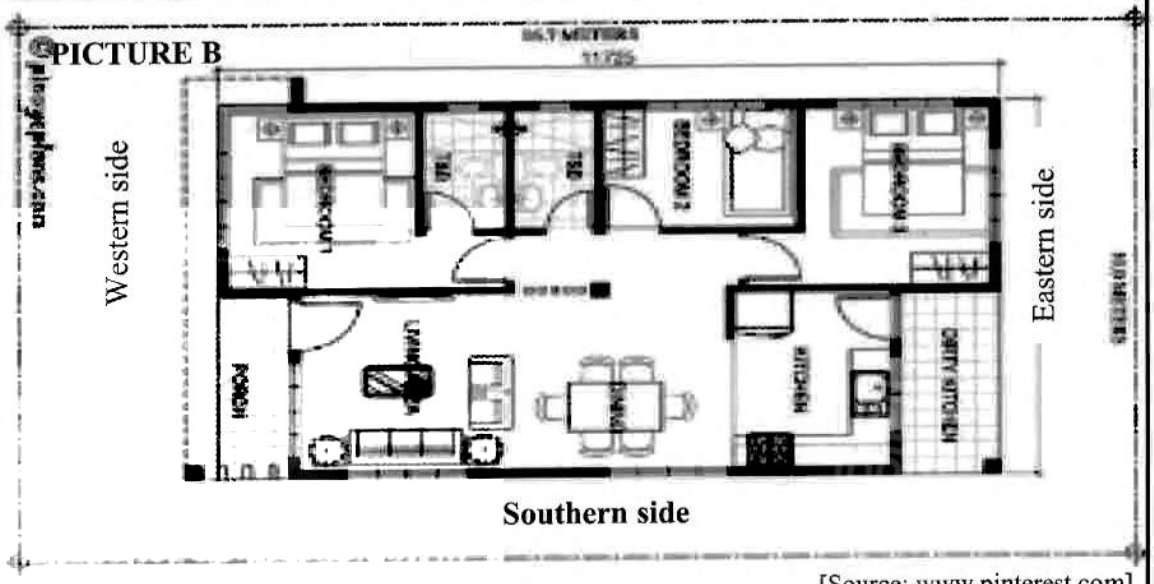
TABLE 1: MATHEMATICAL LITERACY TERMS OR CONCEPTS WITH DESCRIPTIONS

	COLUMN A	COLUMN B
1.2.1	Unit for speed	A distance from the centre of a circle to the outer part of the circle.
1.2.2	Radius	B hour per kilometre.
1.2.3	Perimeter	C imperial
1.2.4	Layout Plan	D kilometres per hour
1.2.5	Conversion from cm^2 to m^2	E distance around the boundary of a shape
1.2.6	The system of measurement that uses grams and kilograms.	F outside of a building as seen from a side view.
		G 10 000
		H straight line that passes through the centre of a circle whose endpoints lie on the circle.
		I 100
		J Arrangement and design of features inside a building.
		K metric

(6×2) (12)

1.3 Below are pictures of house plans.





[Source: www.pinterest.com]

Use the pictures above to answer the questions that follow.

1.3.1 Write down the name of the house plan shown in PICTURE B. (2)

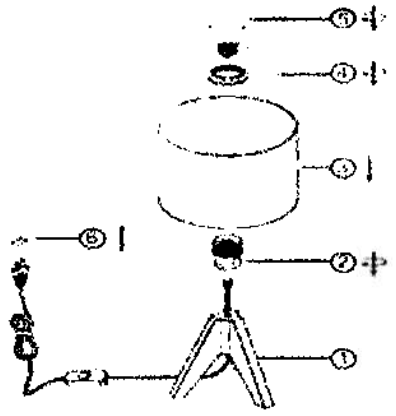
1.3.2 Identify the side on Picture B which represents the side labelled Z in Picture A. (2)

1.3.3 Choose the correct word to make the statement true.
The house plan in PICTURE A is ……(2Dimensional / 3Dimensional) (2)

1.4 Below is information on assembling a lamp shade.
Use the diagram to answer the following questions.

DIAGRAM TO ASSEMBLY A LAMP SHADE

Part	Description
1	Linen Shades
2	Socket Ring
3	Table Lamp
4	Instruction Manual
ASSEMBLY INSTRICTIONS	



1.4.1 Write down the name of part number 2. (2)

1.4.2 Name the part on the list which has the instructions on how to assembly a lamp shade. (2)

1.4.3 The circumference of the lamp shade is 125,68 cm. Write down the letter that represents a formula used to calculate the circumference.

A. $\pi \times \text{radius}^2 \times \text{height}$
B. $2 \times \pi \times \text{radius}$
C. $\pi \times \text{radius}^2$ (2)

1.4.4 State whether the statement below is TRUE or FALSE.

"Tightening items on the lamp shade is done in an anticlockwise direction." (2)
[30]

QUESTION 2

2.1 ANNEXURE A in the ANSWER BOOK shows a seating plan of a cinema. Mandisa and her mother went to watch a movie in this cinema.

Use ANNEXURE A to answer the questions that follow.

2.1.1 Define the term seating plan. (2)

2.1.2 Determine the general direction of seat G14 from the entry point. (2)

2.1.3 On that day, the cinema was 60% full. Mandisa stated that more than 60 seats were unoccupied in the cinema.

Verify with calculations whether her statement is VALID. (5)

2.1.4 They bought tickets to sit on the two middle seats on the 6th row from the entry point.

Identify the seat numbers. (3)

2.1.5 Write down the feature on the plan that shows that the cinema is wheelchair friendly. (2)

2.1.6 One of the cinema goers was allocated seat number E9. Describe the directions to get to her seat from the entry point. (5)

2.2 The cinema offers the following snack options:

Popcorn	**Drinks**	**Sweets**	
Large (L)	Slush (S)	Jelly tots (J)	
Regular (R)	Cold drink (C)	Smarties (T)	
	Water (W)		

Use the table above and the tree diagram on ANNEXURE B to answer the following questions.

2.2.1 Write down the total number of snack combinations available. (2)

2.2.2 Complete the missing information on the tree diagram. (3)

2.2.3 Determine (as a percentage) , the probability of buying jelly tots. (3)

[27]

QUESTION 3

3.1 Zinzi runs a business of renting out trampolines for kiddies parties.

ANNEXURE C in the ANSWER BOOK shows a picture of a trampoline.

Use ANNEXURE C to answer the questions that follow.

3.1.1 Show that the width of the pad is 0,35 m. (2)

3.1.2 Determine to the nearest m^2, the area of the jumping mat.

You may use the following formula:

Area of a circle = 3,142 × radius ^{2} (4)

3.1.3 Give a reason of having a net around the trampoline. (2)

3.1.4 Zinzi stated that the area occupied by the pads on the trampoline is less than 4 m^2

Verify, showing ALL calculations , if her statement is VALID.

You may use the following formula:

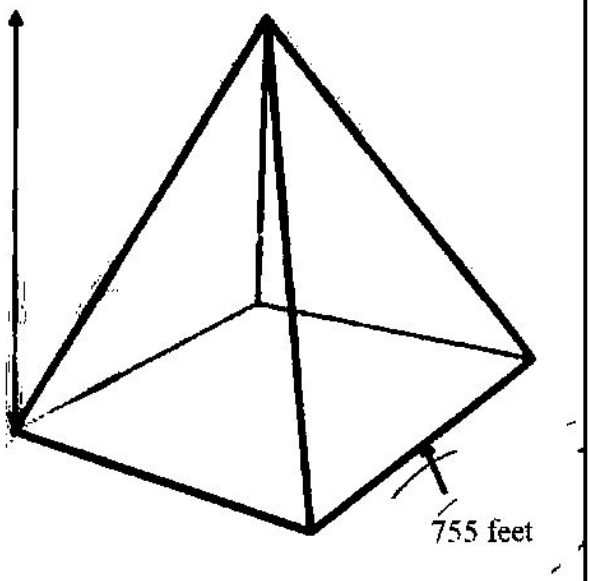
Area of a circle = 3,142 × radius ^{2} (6)

3.2 The Great Pyramid of Giza located in Egypt is 450 feet tall and has a base of 755 feet.

PICTURE OF THE GREAT PYRAMID	DIAGRAM OF THE GREAT PYRAMID OF GIZA







NOTE: 1 foot : 30,48 cm

1 cubic foot = 28,3168466 litres.

1 tonne = 1 000 kg

$1m^3$ = 1 000 litres

[Source: https://en.wikipedia.org]

Use the information above to answer the questions that follow.

3.2.1 Determine in cm^2, the area of the base of the The Great Pyramid.

You may use this formula : **Area = side × side** (4)

3.2.2 Calculate in $feet^2$, the total surface area of the exposed parts of the pyramid. Round off your answer to the nearest ten thousands.

You may use the following formula:

Area = ½ base × height (5)

3.3 The Great Pyramid of Giza is built using stones. Each stone weighs 2,5 tonnes. The pyramid is made of 2,3 million stones.

The volume of the pyramid is 2,6 million cubic meters.

3.3.1 Determine the total weight of the stones in kilograms. (4)

3.3.2 Convert the volume of the Pyramid to cubic feet. (5)

[32]

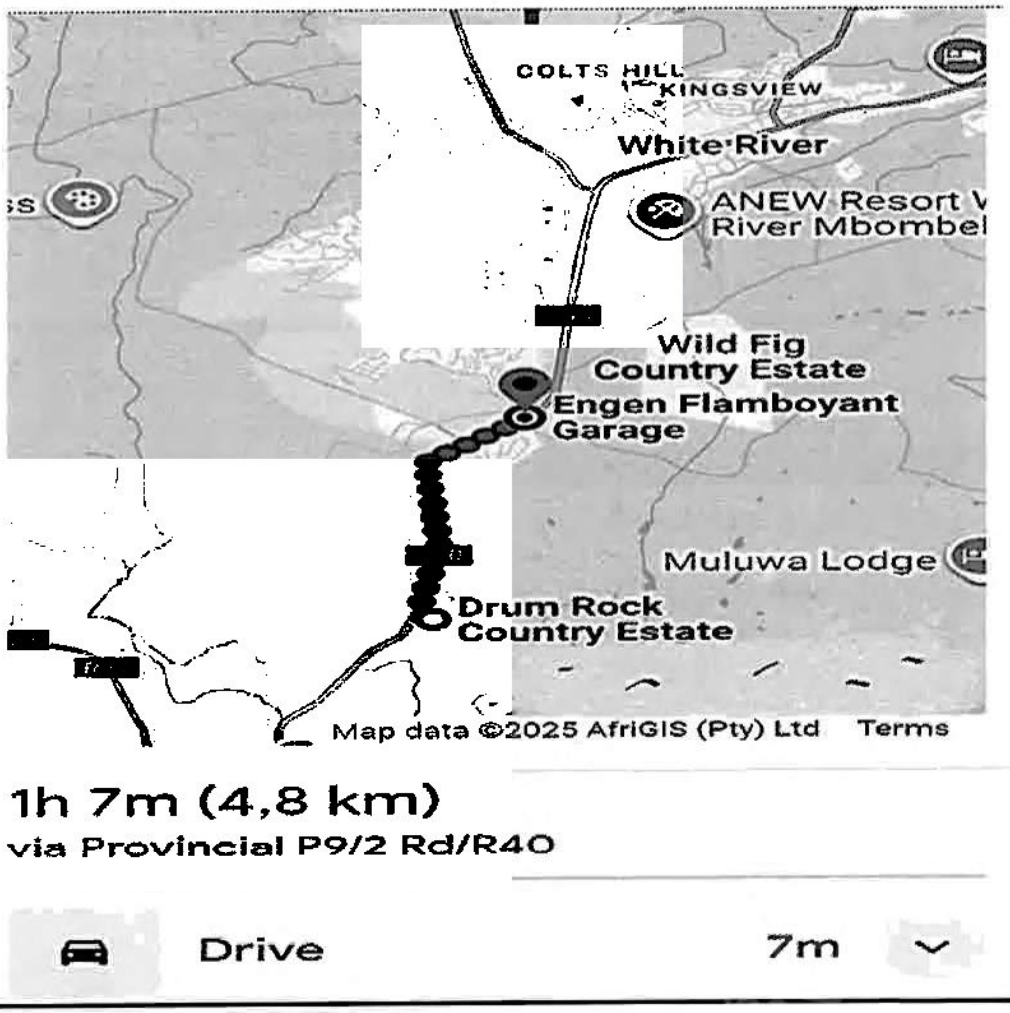
QUESTION 4

4.1 The Mashele family lives in Drum Rock Country Estate. They take a walk to Engen Flamboyant filling station in Rocky Drift.

A part their walk is shown below in the map.

Use the map to answer the questions that follow.

PART OF MAP FROM DRUM ROCK COUNTRY ESTATE TO ENGEN FLAMBOYANT



4.1.1 Write down the name of the regional road used by the Mashele family. (2)

4.1.2 Mr Mashele stated that his family walk at an average speed of more than 5 km/hr.

Verify, showing ALL calculations whether the statement is VALID.

You may use this formula: $\textbf{Speed} = \frac{\textbf{Distance}}{\textbf{Time}}$ (5)

4.1.3 Mrs Mashele has a height of 165 cm and a weight of 87 kg, Determine her weight status.

You may use the following formula:

$$\textbf{BMI} = \frac{\textbf{weight (kg)}}{\textbf{height} \times \textbf{height (m}^2\textbf{)}}$$



(4)

4.2

The Mashele family own a TV stand. The thickness of all the boards used on the TV stand is 15 mm. A picture of the TV stand is shown on ANNEXURE D in the ANSWER BOOK.

Use the information above and ANNEXURE D to answer the following questions.

4.2.1 Determine the total area available to hold the TV.

You may use this formula: **Area = length × width** (7)

4.2.2 The Mashele family intends buying a new TV with a height of 36,8 inches and a length of 65,4 inches. Show that the area of the new TV is 15 527,19 cm^2.

You may use this formula: **Area = length × width**

NOTE: 1 inch = 2,54 cm (4)

4.2.3 Determine, in m^3, the volume of the brown boards on the TV stand.

You may use this formula: **Volume = length × width × height** (6)

[28]

QUESTION 5

5.1 Articulated trucks are used to transport coal from Belfast Mpumalanga to the harbour of Maputo in Mozambique for export to other countries.

- An average of 3 000 trucks transport coal from Belfast to Maputo each day.
- The weight of a loaded truck is 48 tonnes.
- A truck without the trailer weighs 10 000 kg
- Each empty trailer weighs 13 600 kg

NOTE: 1 tonne = 1000 kg

- **Articulated truck is a heavy vehicle with pivot joint between its front and rear trailers.**

PICTURE OF AN ARTICULATED TRUCK TRANSPORTING COAL



[Source adapted from: www.csrf.ac.uk]

Use the information above to answer the questions that follow.

5.1.1 A truck driver stated that the harbour receives more than 30 000 tonnes of coal from South African articulated trucks per day.

Verify, showing ALL calculations, whether the claim is CORRECT. (7)

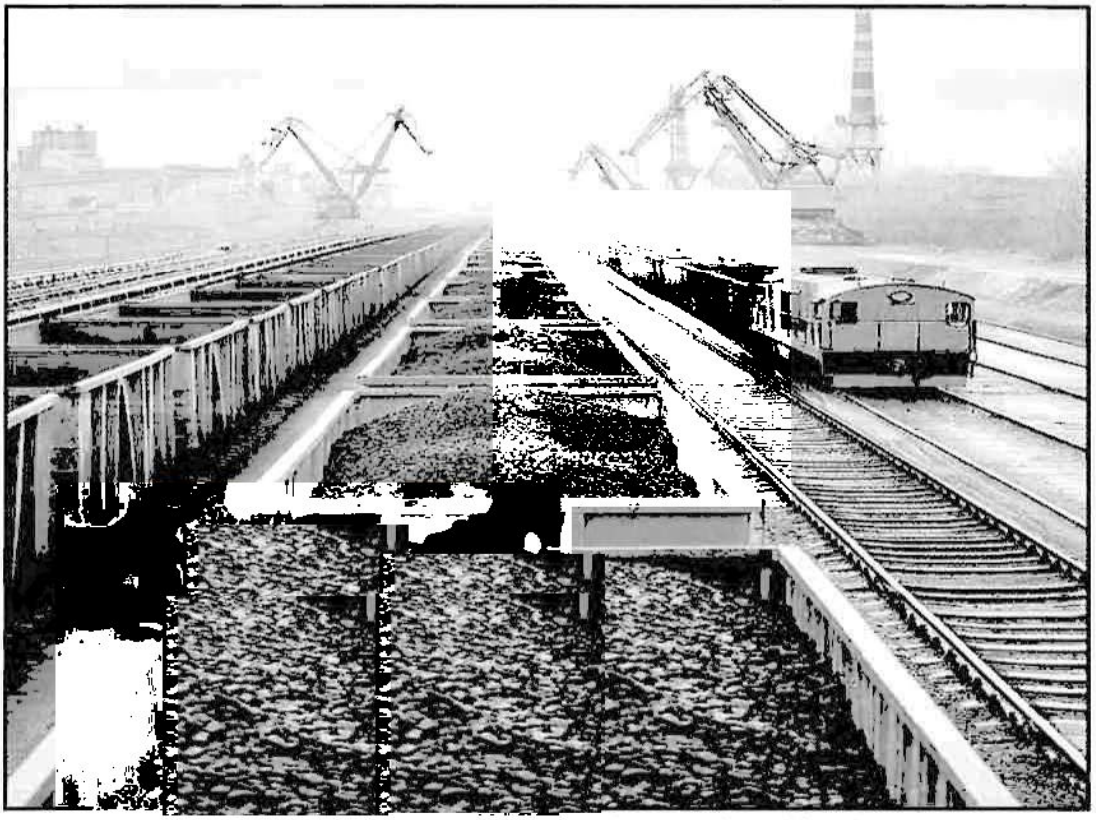
5.1.2 The Maputo harbour exports 205 000 tonnes of coal per month.
The Supervisor claimed that the trucks need 7 days to deliver enough coal to be exported.

Verify, showing ALL calculations, whether the claim is VALID. (3)

5.2 A train is an alternative way of transporting coal from South Africa to the Maputo harbour.

A picture of a train with wagons is shown below.

PICTURE OF A TRAIN TRANSPORTING COAL



Source: Adapted from https://www.news24.com

- One train wagon holds a maximum of 1 200 tonnes of coal.
- The density of coal is 1,1 g/cm^3

Determine in m^3, the capacity of coal in each train wagon.

You may use the following formula:

Density = Mass ÷ volume

NOTE:
1 tonne = 1000 kg
1 kg = 1 000 grams
1 m^3 = 1000 000 cm^3

(7)

5.3 The University of Western Cape has a Nature Reserve Unit, used by the university staff, students as well as the surrounding community for educational and recreational purposes.

ANNEXURE E in the ANSWER BOOK shows a map of the UWC Nature Reserve Unit.

[Source: www.uwc.ac.za]

Use the Map on ANNEXURE E to answer the questions that follow.

5.3.1 Write down the number of picnic areas shown on the map. (2)

5.3.2 Determine in minutes, the duration on which the Nature Reserve is opened in a week. (3)

5.3.3 Suggest two courses offered by the university which uses the nature reserve as a source for educational purposes. (2)

5.3.4 A visitor in a car uses entry point gate 1 & 2 going to the Cape Flats Dune Strandveld.

(a) Write down the name of the street. (2)

(b) Why would the car driver not use his car for the entire trip. (2)

5.4 The University of Western Cape is located in Bellville,

- The total population of Bellville in 2011 was 112 507.
- The population in 2025 is 27,6% more than the population in 2011.
- The total area of Bellville is 52,39 km^2.

The Municipality claimed that the population density in 2025 is 2 470/km^2.

Verify, showing ALL calculations, whether the claim is VALID. (5)

[33]

TOTAL: 150

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