Province of the
EASTERN CAPE
EDUCATION

Iphondo leMpuma Kapa: Isebe leMfundo
Provinsie van die Oos Kaap: Department van Onderwys
Porafensie Ya Kapa Botjahabela: Lefapha la Thuto

NATIONAL SENIOR CERTIFICATE

GRADE 12

SEPTEMBER 2026

MATHEMATICAL LITERACY P2

MARKS: **150**

TIME: **3 hours**

This question paper consists of 11 pages and a SPECIAL ANSWER BOOK of 15 pages.

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INSTRUCTIONS AND INFORMATION

Read the following instructions carefully before answering the questions.

1. This question paper consists of FIVE questions.
2. Answer ALL the questions in the SPECIAL ANSWER BOOK that is provided.
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.

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QUESTION 1

1.1 Nathan booked a flight to Johannesburg with an airline. He downloaded a seating plan of the airplane to check the seat that he booked for his flight. The seating plan of the airplane is shown in ANNEXURE A in the ANSWER BOOK.

Use ANNEXURE A to answer the questions below.

1.1.1 Define the term '*seating plan*'. (2)

1.1.2 Identify the row and the seat number that Nathan booked for his flight. (2)

1.1.3 If the crossed-out seats are occupied, determine the number of available seats in row **B**. (2)

1.1.4 Determine the number of exits on this seating plan. (2)

1.1.5 What is the general direction of seat A18 from seat F9? (2)

1.2.6 Determine the fraction of seats that are located at the exits. (2)

1.2 The body-mass index (BMI) of a person can be monitored using a bathroom scale. Thandeka bought a bathroom scale with a diameter of 45 cm.



[Adapted from https://www.amazon.in/]

Use the information above to answer the question that follow.

1.2.1 Define the term '*diameter*' within the context above. (2)

1.2.2 Identify the maximum body weight the scale can hold. (2)

1.2.3 Thandeka measured her height and the reading is 1,65 metres. Determine her height in millimetres. (2)

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1.2.4 Choose the CORRECT letter of the unit that is used to measure BMI.

A $(kg/m)^2$
B kg^2/m
C kg/m^2 (2)

1.2.5 Express as a ratio, the body weight measurement on the scale to the maximum weight the scale can hold. (2)

1.3 The images below represent different measuring instruments. Study the images below and answer the questions that follow.

W	X
	
Y	**Z**
	

[Source: www.googleimages.com]

Choose a image above that will match a description below. Write only the letter (W–Z) next to the question numbers (1.3.1 to 1.3.3), for example 1.3.4 A.

1.3.1 An instrument used to measure the length of a bathroom. (2)

1.3.2 An instrument used to measure a piece of cloth. (2)

1.3.3 An instrument used to measure the speed of a car. (2)

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QUESTION 2

2.1 James lives in Humansdorp and is traveling to Mossel Bay on the N2. He uses the map in ANNEXURE B in the ANSWER BOOK to plan his local trips. Study the map and answer the questions that follow.

2.1.1 Identify the type of map used by James in ANNEXURE B. (2)

2.1.2 List the first TWO towns that he will pass on his way to Mossel Bay. (2)

2.1.3 Except the N2, identify ONE other national road on this map. (2)

2.1.4 Determine the distance between Humansdorp and Mossel Bay. (3)

2.1.5 James stopped in Knysna, 133 km away from his destination. Determine the average speed (in km/h) at which he would travel if it were to take him one and a half hours to reach Mossel Bay. Round off your answer to ONE decimal place.

You may use the formula: $\textbf{Time} = \frac{\textbf{Distance}}{\textbf{Speed}}$ (4)

2.1.6 James left Knysna at 12:47. Determine his arrival time in Mossel Bay. (3)

2.1.7 Determine the probability, as a decimal fraction, to find a National Park (NP) directly next to the N2. (3)

2.1.8 List TWO disadvantages of using the type of map in ANNEXURE B. (4)

2.2 Enroute to Mossel Bay, James decided to visit his uncle in Oudtshoorn for two days. According to his trip logbook, the total return distance for this trip, including the detour to Oudtshoorn, was 748 km. James used 45 litres of petrol for his trip. He did not use the car to travel in and around Mossel Bay.

The vehicle manufacturer claims that this specific model has an urban/highway combined fuel consumption of 7,2 litres per 100 km.

Use the information above to answer the questions that follow.

2.2.1 Show how the total return distance for the trip was calculated. (2)

2.2.2 Verify, with calculations, whether the manufacturer's claim about the fuel consumption (per 100 km) is correct for James' return trip. (4)

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QUESTION 3

3.1 A small business builds and sells dog kennels. The options they consider for the dog kennels are shown in the diagram below.

WOODEN DOG KENNEL	WATERPROOF PLASTIC DOG KENNEL
	
DIMENSIONS OF THE DOG KENNEL: Length: 1,3 m Width: 96,5 cm Wall height: 1,04 m Roof sloping heigh: 0,5 m Weight: 29,78 kg	**DIMENSIONS OF THE DOG KENNEL:** Total area of the plastic used: 66 930 cm^2 Cost of waterproofing paint: R198,48/m^2 Weight: 23 kg

[Adapted from https://heartdeco.co.za/products]

Use the information above to answer the questions that follow.

3.1.1 Convert the width of the wooden dog kennel to metres. (2)

3.1.2 The manufacturer of the waterproofing plastic dog kennel stated that the kennel can only take a dog's weight that is 33% less than the weight of the kennel. Hence, determine the maximum weight of the dog. (3)

3.1.3 The wooden dog kennel will be covered with two coats of varnish after manufacturing.

Calculate:

(a) The area of the TWO rectangular sides of the dog kennel.

You may use the following formula:

Area of a rectangle = width × wall height (3)

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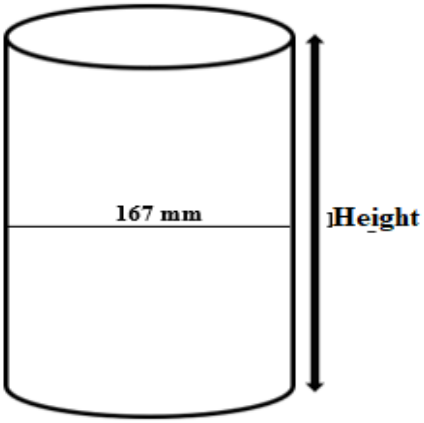
(b) The number of tins of varnish needed to varnish ONE dog kennel if the:

* Area of the opening of the door is 0,4 m^2
* Area of the front and back panels together, excluding the door, is 4,004 m^2
* Roof AND the floor of the kennel will not be varnished
* Spread rate of the varnish is 3 m^2 per 2 litres
* Varnish is sold in 5 litre tins

You may use the following formula:

Total surface area = Area of the triangular front and back (excluding the door opening) + area of the two rectangular sides. (7)

3.2 The varnish is sold in 5-litre tins that is filled to 95% its maximum capacity. The diagrams and the dimensions of the varnish tin are given below.

PICTURE OF THE VARNISH TIN	DIAGRAM OF THE VARISH TIN WITH DIMENSIONS
 Capacity of the tin = 5 litres	

[Source: https://colortone.co.za/products]

Use the information above to answer the questions that follow.

3.2.1 Define the term '*capacity*' within the context above (2)

3.2.2 Determine the radius of the varnish tin in centimetres. (3)

3.2.3 Calculate the height of the **varnish in the tin**, if 1 litre = 1 000 cm^3.

You may use the following formula: **Volume = 3,142 × radius² × height** (6)

3.2.4 Provide ONE reason why the tin is not filled to its maximum capacity. (2)

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QUESTION 4

4.1 Carol bought a house in Stutterheim. The floor plan of the house is shown in ANNEXURE C in the ANSWER BOOK.

Use the floor plan in ANNEXURE C to answer the questions below.

4.1.1 Distinguish between a '*floor plan*' and a '*layout plan*'. (4)

4.1.2 Determine the number of doors opening to the right on the floor plan. (2)

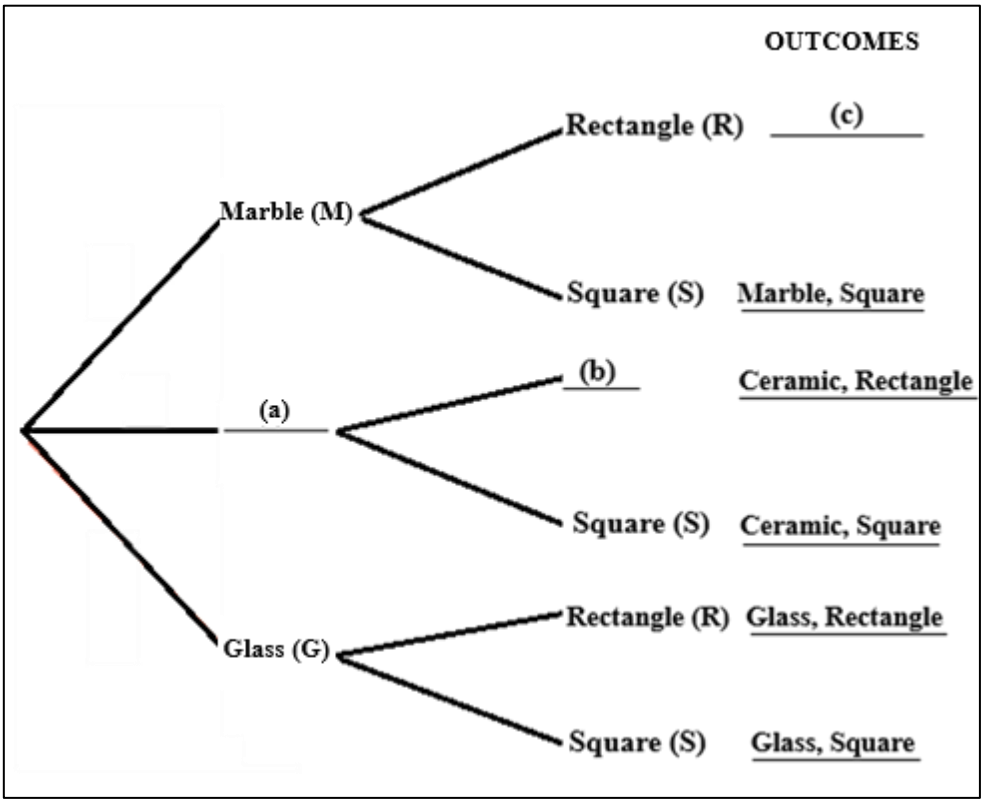
4.1.3 Determine the probability that a bedroom would get sun mostly in the morning. (2)

4.1.4 Calculate the total length of the house in metres.

NOTE: 1 inch = 0,0254 m (4)

4.2 Carol wants to tile the dining room. She must choose from three different types of tiles: marble (M), ceramic (C), and glass (G) tiles. Each tile comes in either a rectangular (R) or a square shape (S).

Use the above information to complete the tree diagram below which illustrates the probability of using each type and shape of tile. Write only the letter and the correct answer.



(3)

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4.3 Carol decided to tile the dining room using the ceramic tiles. The dimensions of the tiles are given below.

TABLE 1: DIMENSIONS OF THE TILES

TILE TYPE	LENGTH	WIDTH
Square	0,7 m	0,7 m
Rectangular	850 mm	650 mm

[Adapted from https://www.rubi.com/en/blog/rectangular-tiles/]

Use TABLE 1 above to answer the questions that follow.

4.3.1 Carol claims that she will need a minimum of twenty rectangular tiles to tile the living room only.

Verify, with the necessary calculations whether her statement is VALID. (9)

4.3.2 Carol decides to buy 50 extra tiles so that she can tile the bedrooms too. Determine the total number of boxes of tiles that Carol will buy if one box contains 4 tiles. (4)

4.3.3 It takes the tiler 40 minutes to lay 10 tiles and 1hour 22 minutes to grout the entire living room. Determine the time the tiler will finish the tiling job if he starts tiling at 09:20 in the morning. (5)

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QUESTION 5

5.1 Nthabiseng planned to go on tour to France. The tour will include visiting FIVE cities. The cities to be visited are Bordeaux, Nantes, Angers, Orleans, and Dijon.

The map below shows the routes she will be taking from France.



[Adapted from https://www.shutterstock.com/]

Study the map above and answer the questions that follow.

5.1.1 Write down the type of scale used in this map. (2)

5.1.2 Use the scale of the map to determine what the map distance should be between Nantes and Angers if the actual distance between the two cities is 56,86 miles. Give your answer rounded off to the nearest centimetre.

NOTE: 1 km = 0,621371 miles (4)

5.1.3 When travelling by train, the duration of the ride from Angers to Orleans takes 2 hours 6 minutes. The travel agent claims that the train ride from Orleans to Dijon should take 2 hours 46 minutes if the average speed from Orleans to Dijon is the same.

Verify, using measurements and calculations, if her claim is CORRECT. (7)

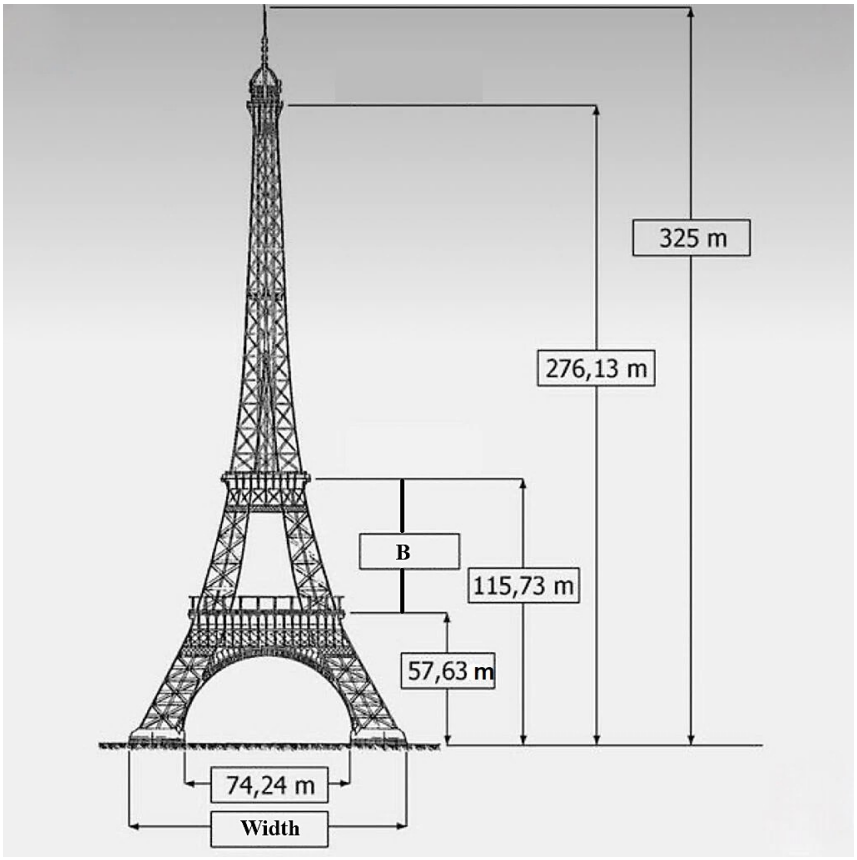
5.1.4 Nthabiseng pays a tenth more for the tour to include a trip to the Eiffel tower. The cost of the tour excluding this trip is €157.

Verify, whether the R2 500 she has budgeted for the Eiffel tower tour, will be enough. Note the exchange rate; €1 : R18,20 (4)

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5.2 While Nthabiseng was touring France, she decided to pay a visit to the Eiffel Tower in Paris. The diagram with dimensions of the tower is shown below.



[Adapted from https://parisromance.com/paris/landmarks/the-eiffel-tower]

Study the information above and answer the questions that follow.

5.2.1 Determine what fraction of the height of the entire tower is represented by **B**. Write your answer in decimal form. (3)

5.2.2 The length of the outer width of the Eiffel Tower is 59% more than the length of the inner width. Hence, determine the length of the outer width in metres. (3)

5.2.3 The Eiffel Tower was inaugurated in March 1889. Determine how many months the Eiffel Tower is in existence in September 2026. (4)

5.2.4 With the construction of the Eiffel tower, the ratio of number of steel poles used to its height is:

18 038 poles : height in metres

Use this ratio to determine the average mass per height in metres if one pole weighs 450 kg. Write your answer in ton per metre. (5)

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TOTAL: 150

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