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

JUNE 2026

MATHEMATICAL LITERACY P2

MARKS: **100**

TIME: **2 hours**

This question paper consists of 11 pages including an addendum with 1 annexure.

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INSTRUCTIONS AND INFORMATION

Read the following instructions carefully before answering the questions.

1. This question paper consists of FOUR questions. Answer ALL the questions.
2. Use ANNEXURE A in the ADDENDUM to answer QUESTION 2.1.
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 Marna is a baker who specialises in party cakes. Her oven is calibrated in Fahrenheit as seen on the oven dial below.



[Source: www.googleimages.com]

Use the information above to answer the questions that follow.

1.1.1 Identify the temperature on the oven dial. (2)

1.1.2 Which system of measurement has been used in the diagram above? (2)

1.2 Marna has an order for five dozen lamingtons. She started baking her first batch at the time displayed on the clock below.



[Source: www.googleimages.com]

1.2.1 Identify the time format displayed on the clock above. (2)

1.2.2 Write the time on the clock in words. (2)

1.2.3 Convert the minutes on the clock above to seconds. (2)

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1.3 TABLE 1 below contains a list of definitions used in Mathematical Literacy.

A	Assessment tool that uses the weight to height ratio.
B	A symbolic representation of selected characteristics of a place drawn on a flat surface.
C	Shows the design and dimensions of the inside of a building from an aerial view.
D	The maximum amount of liquid a container can hold.
E	Shows the design and dimensions of the outside of a building from a side view.
F	The total space occupied by a two-dimensional shape.
G	It shows how fast an object moves on average over a period of time.
H	The total length of the boundary or outside edge of a two-dimensional shape.

Match the definitions in TABLE 1 above with EACH of the concepts below. Write only the letter (A–H) next to the question numbers (1.3.1–1.3.5), for example 1.3.6 I.

1.3.1 Map (2)

1.3.2 Area (2)

1.3.3 BMI (2)

1.3.4 Average speed (2)

1.3.5 Capacity (2)

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QUESTION 2

2.1 Hein and his four friends visited a resort and decided to hike the Medicine Root Trail. An information board at the start of the trail indicates that the trail has a roundtrip distance of 7.5 miles. The Medicine Root Trail and surrounding areas are shown in ANNEXURE A.

Use ANNEXURE A to answer the questions below.

2.1.1 Identify the trail that crosses Old Northeast Road. (2)

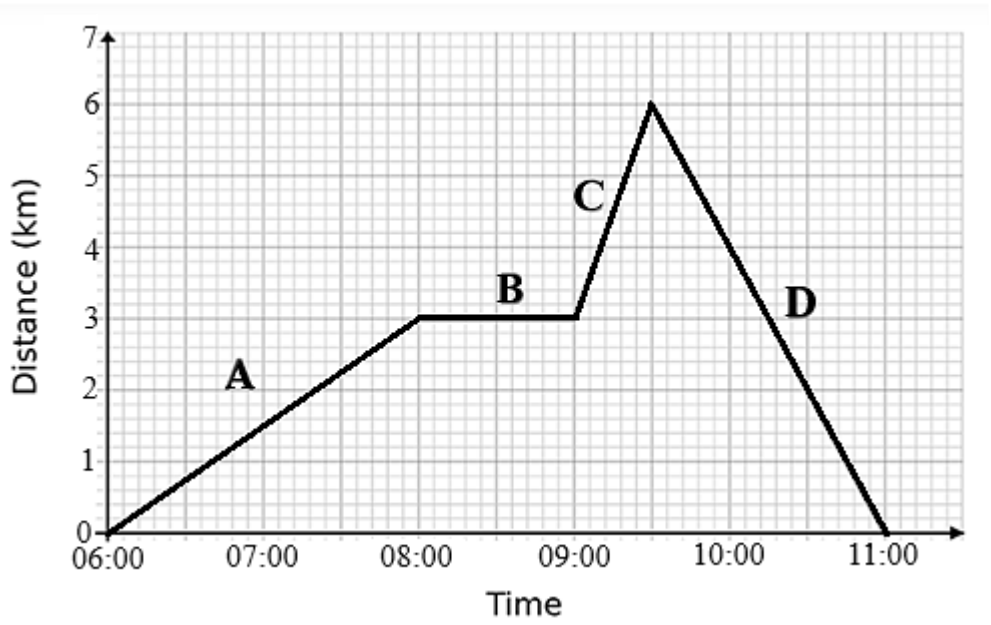
2.1.2 Convert the distance of the roundtrip to kilometres, rounded to TWO decimal places.

NOTE: 1 kilometre = 0,6214 miles. (3)

2.1.3 Determine the probability of finding a restroom on the Medicine Root Trail. (2)

2.1.4 Hein measures a distance of 5,4 cm from A to B on the Medicine Root trail and uses this measurement to help calculate the one-way route. He complains that the distance indicated on the information board at the start of the trail is incorrect. Show, by means of calculations, whether Hein is correct or not. (5)

2.2 Hein and his friends decided to have a picnic at the last viewpoint on their hiking trail before returning to their cars. Below is a graph that depicts their hiking journey.



[Source: https://mmerevise.co.uk/gcse-maths-revision/distance-time-graphs]

2.2.1 Explain, by referring to the context, why the gradient (slope) of the graph from 06:00–08:00 differs from the gradient of the graph from 09:00–09:30. (2)

2.2.2 Determine the total distance (in kilometers) that they walked on the day if Hein and his friends' cars are parked 250 m meters from the start of the Medicine Root Trail. (4)

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2.3 Hein and his four friends decided to extend their hiking expedition to an overnight stay at the resort's accommodation. Their stay is from 18:00 on 30 December 2025 until 10:00 on 02 January 2026.

The following rates are charged at this resort:

Seasons and Dates:

High season	**Peak season**
06 January 2025 – 20 March 2025	21 March 2025 – 24 March 2025
25 March 2025 – 19 April 2025	20 April 2025 – 25 April 2025
26 April 2025 – 10 December 2025	11 December 2025 – 05 January 2026
7-Sleeper Chalet	
High season	**Peak season**
R3 795 per night	R4 025 per night

[Adapted from: www.foreverblydcanyon.com]

2.3.1 Determine the cost per person for Hein and his four friends for the duration of their stay. (4)

2.3.2 Suggest a reason why Hein and his friends should rather book their stay during the high season. (2)

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QUESTION 3

3.1 Danny is a cyclist who needs to travel 23,7 kilometres on her mountain bike during a competition. Her mountain bike is illustrated in the diagram below:



[Adapted from: www.googleimages.com]

3.1.1 Determine the radius of the wheel in centimetres. (2)

3.1.2 Determine how many times her bike's wheel would have to rotate to complete this competition distance. The distance of one rotation of the wheel is given by the formula below:

Distance of one rotation = 2 × 3,142 × radius (6)

3.1.3 The size of the handlebar is roughly the distance between the two wheels. Determine the size of the handlebar of this bike. (2)

3.1.4 Danny needs to consume at least a litre of her special energy drink throughout the race. The race organisers provide cyclists with a bottle measuring 8 cm in diameter and 22 cm in height. Show, by means of calculation whether the bottle will be big enough to hold the energy drink.

You may use the following formula:
Volume = 3,142 × radius ^{2} × height

NOTE: 1 mℓ = 1 cm^3 (5)

3.1.5 The temperature on race day is predicted to be 90 degrees Fahrenheit. Convert this temperature to degrees Celsius.

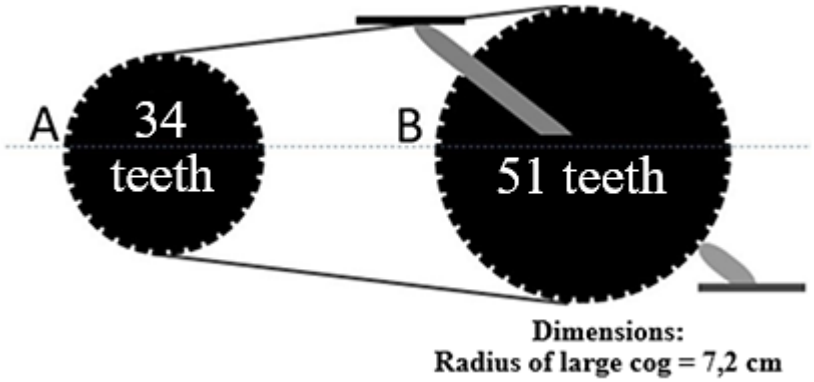
You may use the following formula:
°F = (1,8 × °C) + 32° (3)

3.1.6 A cycling company sold seventeen of these bikes to a cycling group in the following colours: nine black, four green, two red, and two blue. Determine the probability of selecting a green bike. (2)

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3.2 The gears of a mountain bike contain small and large cogs. The number of teeth on the small and large cogs of the bike's gears are shown in the diagram below:



Dimensions:
Radius of large cog = 7,2 cm

[Adapted from: www.pinterest.com]

3.2.1 Write the ratio of the number of teeth of the large cog to the number of teeth on the small cog in its simplest form. (2)

3.2.2 The diameter of the cogs decreases in the same ratio as in QUESTION 3.2.1. Use the above information to calculate the diameter of the small cog. (3)

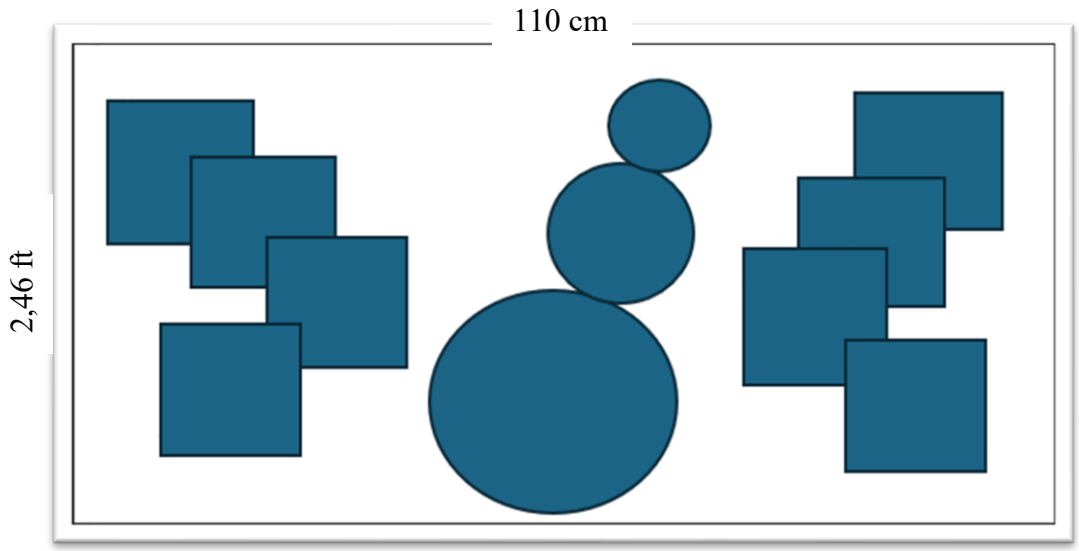
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QUESTION 4

4.1 Nandipha is planning to create an artwork, on canvas, for an art exhibition which will take place on 12 December 2026. Below is a planning diagram of one of her artworks that will be on display at the Art Gallery. The artwork includes two sets of squares and a set of circles.



NOTE:

- Canvas is a fabric that artists use to paint on.
- Nandipha will fill the circles with recycled bottlecaps and the squares with recycled plastic. She will paint the rest of the canvas.
- The area taken up by all the circles is 0,24 m^2 and **one set** of squares takes up 0,15 m^2.
- The backboard measurements are given above, but the canvas overlaps the board above by **2 cm on each side** so that it can be attached to the backboard.

[Adapted from: www.googleimages.com]

4.1.1 Determine the area of the entire canvas in square centimetres.

NOTE: 1 foot (ft) = 30,5 cm

You may use the following formula:
Area of a rectangle = length × width (6)

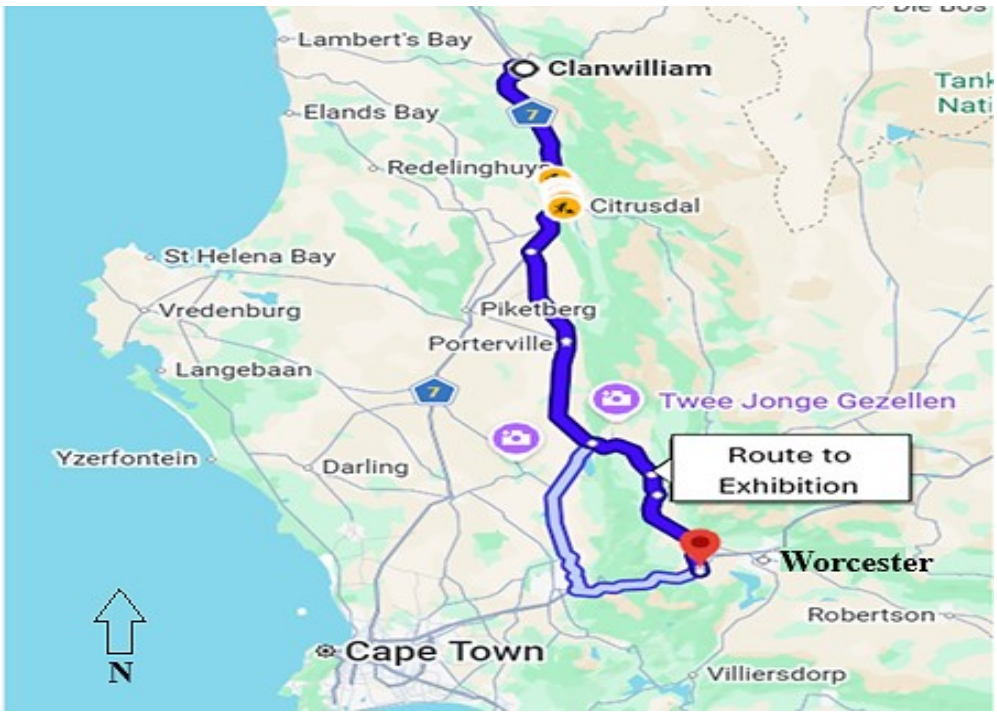
4.1.2 Nandipha needs to determine how much paint to buy. Calculate the total surface area that needs to be painted if she paints the overlap as well. (3)

4.1.3 Calculate the approximate amount of bottle caps Nandipha will need for her artwork if each circle is half the size of the adjacent circle. The largest circle takes 68 bottlecaps. (3)

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4.2 Nandipha's aunt lives in Clanwilliam, 246 km away from the Art Exhibition at the Gallery that she has been invited to. She owns a vehicle with an average fuel consumption of 7,5 litres per 100 km when travelling at an average speed of 105 km/h. The exhibition starts at 16:00. She will be going directly to the exhibition and return home thereafter for work obligations. The map below shows her route.



[Adapted from: www.googlemapscom]

4.2.1 Give the general direction of Worcester from Clanwilliam. (2)

4.2.2 Nandipha measures the route to be taken on the map and gets 82 mm. Use the information above to determine the scale of the map. Write your answer as a unit ratio (with the same units). (4)

4.2.3 Determine how long it will take Nandipha's aunt to arrive at the Art Exhibition if she travels at an average speed of 105 km/h. Give your answer in hours and minutes.
You may use the following formula:
$$\textbf{Speed} = \frac{\textbf{Distance}}{\textbf{Time}}$$ (5)

4.2.4 Determine the time that Nandipha's aunt will arrive at the Art Exhibition if she leaves Clanwilliam at 13:50. (2)

4.2.5 Nandipha's aunt uses 20% more petrol when she rushes home after the exhibition. She insists that she will still use less than 20 litres of petrol for her SINGLE trip home. Show by means of calculation, whether you agree with her or not. (4)

4.2.6 Suggest one factor that Nandipha's aunt should consider if she plans to leave Clanwilliam at 13:50 but does not want to be late for the art exhibition. (2)

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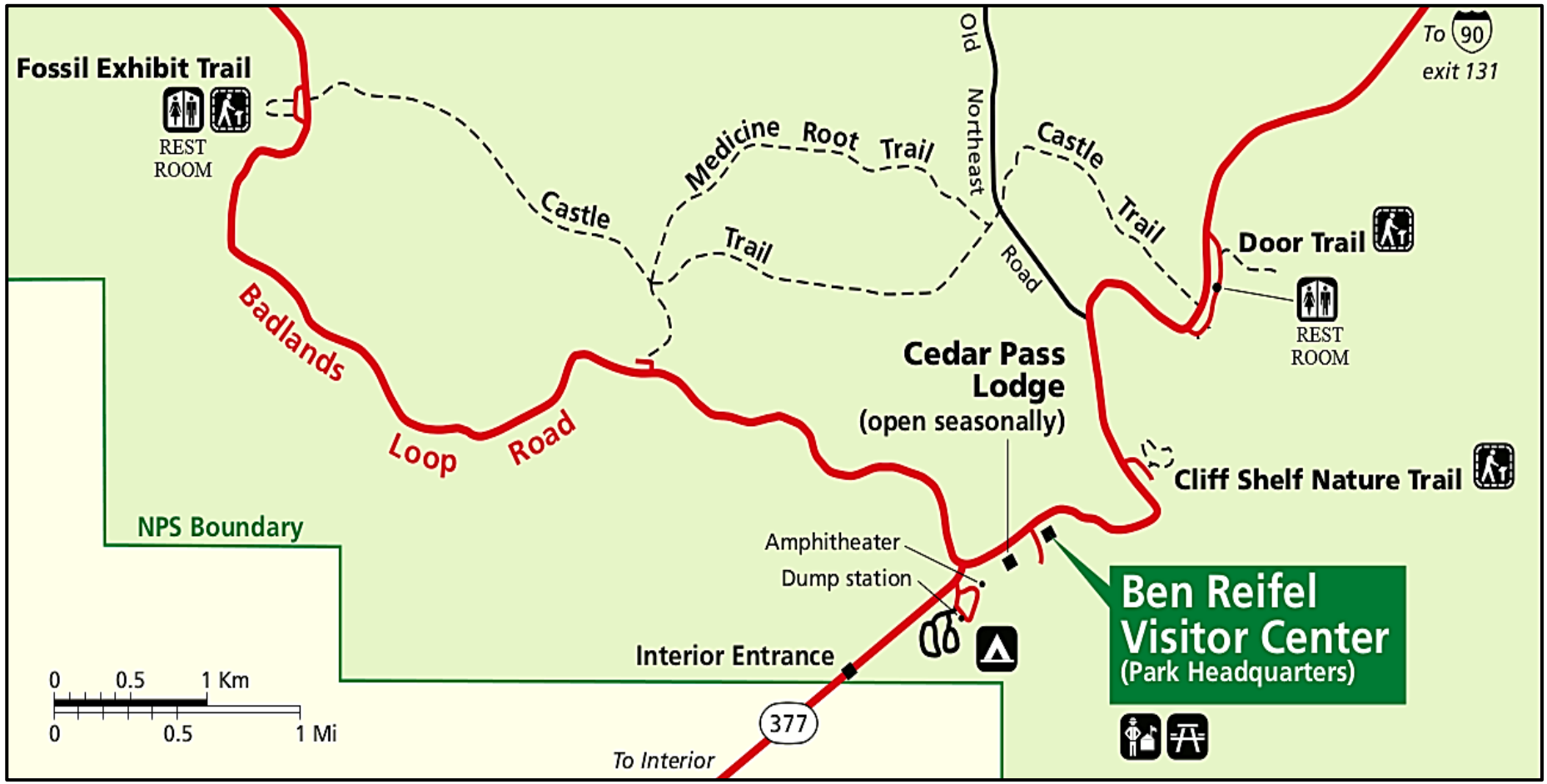
TOTAL: 100

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ANNEXURE A: QUESTION 2.1

THE MEDICINE ROOT TRAIL AND SURROUNDING AREAS



[Adapted from www.petalmaps.co.za]

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