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 2025

MATHEMATICAL LITERACY P2

MARKS: **100**

TIME: **3 hours**

JMLITE2

This question paper consists of 10 pages and an addendum with 3 annexures.

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 the ANNEXURES in the ADDENDUM to answer the following questions:

   - ANNEXURE A for QUESTION 2.1
   - ANNEXURE B for QUESTION 4.1
   - ANNEXURE C 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.

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6. Show ALL calculations clearly.

7. Round off ALL final answers appropriately according to the given context, unless stated otherwise.

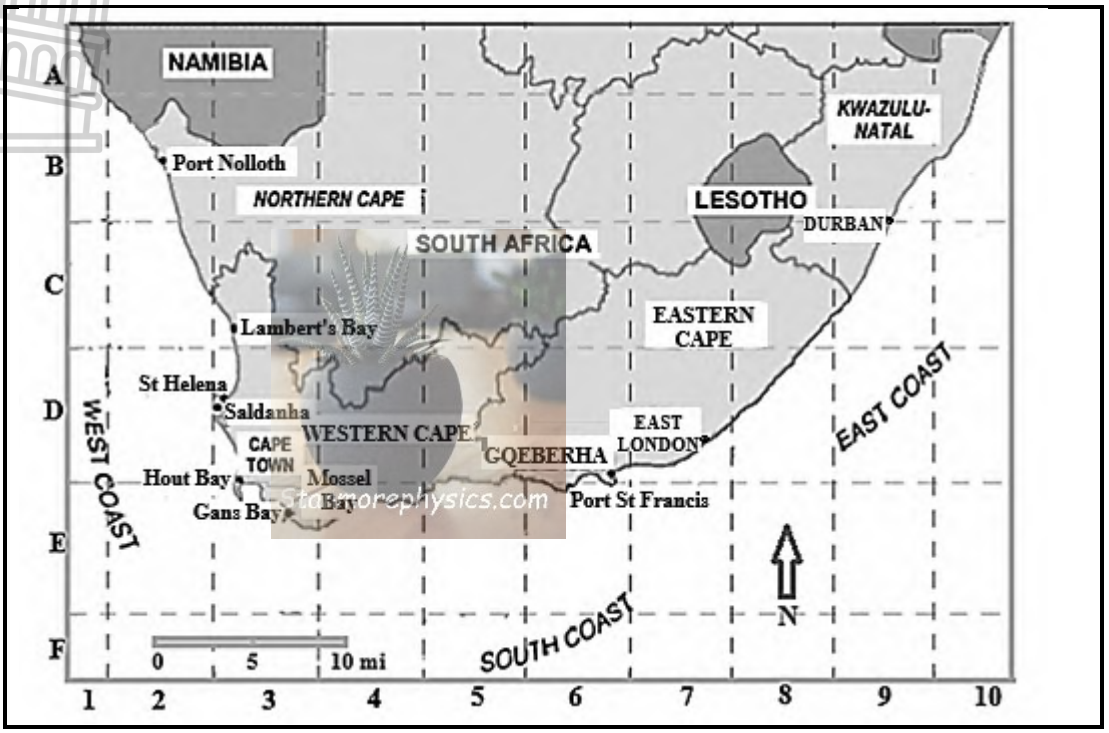
8. Indicate units of measurement, where applicable.

9. Maps and diagrams are NOT drawn to scale, unless stated otherwise.

10. Write neatly and legibly.

QUESTION 1

1.1 The South African coastline measures approximately 2 798 km from the mouth of the Orange River on the West Coast to Ponta do Ouro in Mozambique on the East Coast.



Use the information above to answer the questions that follow.

1.1.1 In which block (grid reference) will you find East London? (2)

1.1.2 Identify the scale of the map. (2)

1.1.3 Write the number of provinces of South Africa that is shown on the map to the number of coasts indicated on the map as a unit ratio. (2)

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1.2 The principal of Rosemary High school was gifted a table decoration by one of the educators. The decoration consists of two wooden bases. Three glass bottles, each containing a flower, were glued to the upper wooden base.

The picture below illustrates the table decoration.



Dimensions:

Top wooden base:
Diameter – 25 cm
Height – 7,9 cm

Bottom wooden base:
Diameter – 36 cm
Height – 105 mm

[Source: FabMood.com]

Use the above information to answer the questions that follow.

1.2.1 Determine the number of flowers on the table decoration. (2)

1.2.2 Determine the radius of the bottom wooden base. (2)

1.2.3 Write down the term used for the line going from the one end, through the middle, to the other end of any circular shape. (2)

1.2.4 Identify, using the letters below, the shape of the wooden bases:

A Rectangular prism

B Pentagonal prism

C Cylinder (2)

1.2.5 The area of the cylinder can be calculated using the formula:
Area = $\pi \times$ radius^2

Hence, define the term *area*. (2)

1.2.6 Calculate the perimeter of the top wooden base.

You may use the following formula:
Perimeter of a circle = π × diameter, where **π = 3,142** (2)

1.2.7 Convert the height of the bottom wooden base to centimetres. (2)
[20]



QUESTION 2

2.1 Jenny, who lives in Kempsey, Australia, and two of her girlfriends decided on a vacation to Brisbane. She found a strip chart to assist with the journey to their destination. ANNEXURE A shows the strip chart from Kempsey to Brisbane.

Use the above information and ANNEXURE A to answer the questions that follow.

2.1.1 List ONE advantage of using a strip chart. (2)

2.1.2 Determine the distance from Beenleigh to Brisbane. (3)

2.1.3 Jenny left Kempsey with half a tank of petrol. Her car's tank has a capacity of 42 litres and a fuel consumption of 5,6 litres per 100 kilometres.

Determine the distance Jenny can drive with the amount of petrol in her car upon departure from home. (3)

2.1.4 Jenny stopped in Grafton to fill her tank to its capacity.

(a) Determine the distance travelled to Grafton. (2)

(b) Determine the number of litres of petrol left in the tank of Jenny's car when they reached Grafton. (4)

(c) How many litres of petrol will Jenny put in her tank to fill it to its capacity? (2)

(d) The petrol price in Australia is \$1,12 per litre. Hence, calculate, to the nearest Australian Dollar (AUD), the cost of the petrol that Jenny needs to pay. (3)

2.1.5 Calculate the average speed (in km/h) that Jenny needs to travel to reach the remaining 299 kilometres to Brisbane in 3 hours 15 minutes.

You may use the following formula:

$$\textbf{Time} = \frac{\textbf{Distance}}{\textbf{Speed}}$$ (4)

2.1.6 Determine the probability, as a percentage, of selecting a highway on the strip chart with an even number. (3)

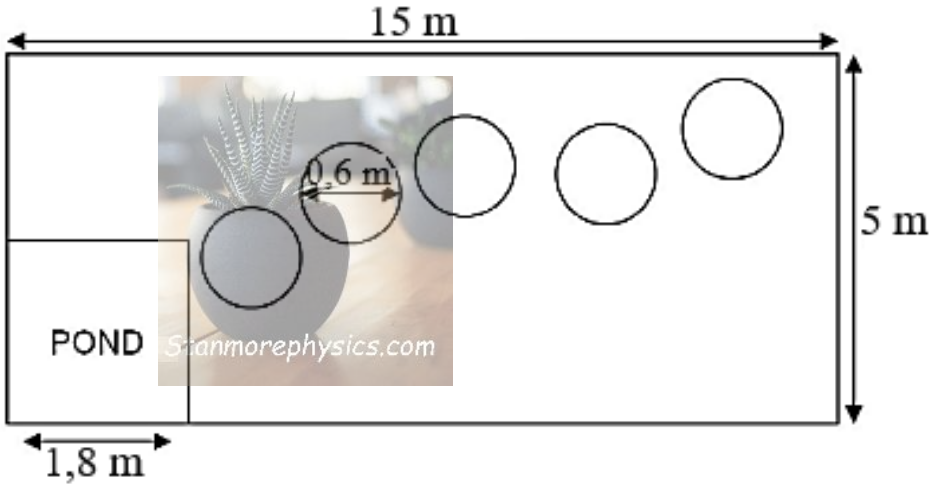
[26]

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QUESTION 3

3.1 The Grade 12 learners of Rosemary High School designed a new rectangular garden as a farewell gift for their school when they matriculate. 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 shown below.



You may use the following formulae:
Area of a rectangle = length × width
Area of circle = π × radius^2, where **π = 3,142**
Area of a square = side × side
Volume of a cube = side × side × depth
Surface area of a square = (length × width) + 4 (length × depth)

The steering committee of the gardening project needs to order the stone tiles and grass for the new garden.

3.1.1 Calculate the area of one of the circular stone tiles. (3)

3.1.2 Calculate the number of squared metres of grass the committee needs to order for the new garden. (5)

3.1.3 The nursery where the grass is ordered from charges R45,50 per m^2 for the grass. The steering committee claims that they will spend less than R3 000 on grass.

NOTE: Grass can only be bought in full squared meters (m^2).

Verify, with the necessary calculations, whether their claim is VALID. (4)

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3.2 The pond at the bottom of the garden will be filled with goldfish. According to the local fish shop the pond should be at least 60 cm deep.

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

3.2.2 The steering committee claims that the pond will require 2 000 litres of water if it is filled to 95% of its capacity.

REMEMBER: 1 m^3 = 1000 ℓ

Verify, with the necessary calculations, whether their claim is VALID. (4)

3.2.3 The local fish shop recommends that for every 240 litres of water you have two goldfish. What is the maximum number of fish that may be ordered for the pond? (3)

3.2.4 Waterproofing paint will be needed to paint the interior of the fishpond. If 1 litre of paint covers 3m^2, calculate how many litres will be needed to waterproof the pond.

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NOTE: The pond needs two coats of paint. (5)

3.3 The garden will need to be watered for two hours a week. To save water the committee decided to get a rainwater tank. The rainwater tank will supply 7 litres of water per minute.

Determine how much water, in litres, will the garden receive once a week from the tank. (3)

[30]

QUESTION 4

4.1 Shariff and his cousin Kevin won a vacation competition and will be going overseas. They will be flying from Johannesburg to London, via Dubai – United Arab Emirates.

ANNEXURE B shows Shariff and Kevin's flight itinerary.

Use the information above and ANNEXURE B to answer the questions that follow.

4.1.1 List the airports that Shariff and his cousin will depart from. (2)

4.1.2 Write the departing time from OR Tambo International Airport in the 12-hour format. (2)

4.1.3 Upon arrival at Dubai International Airport, the boys will need to phone their parents to let them know they are safe. The local time, i.e. the time in Dubai, will be 05:45. Calculate what the time will be in Johannesburg then. (2)

4.1.4 Shariff calculates that the total flight distance from Johannesburg to London is more than 12 000 km. Kevin, however, says that the travelling distance by aeroplane will be less than 12 000 km.

REMEMBER: 1 km = 0,621371 miles

Verify, with the necessary calculations, whom of the two boys is CORRECT. (5)

4.1.5 Kevin has a small hand luggage bag that he is taking on board with him. The dimension of his bag is shown in the picture below.



Calculate, in cubic centimetres, the volume of Kevin's hand luggage bag.

You may use the following formula:
Volume of a rectangular prism = length × width × height (3)

4.1.6 Determine the probability of selecting a flight that has stops between destinations. (2)

4.2 The map of London and surrounding areas where Shariff and Kevin are visiting, is shown in ANNEXURE C. Use ANNEXURE C to answer the questions that follow.

4.2.1 Determine the number of e-toll gates on the map. (2)

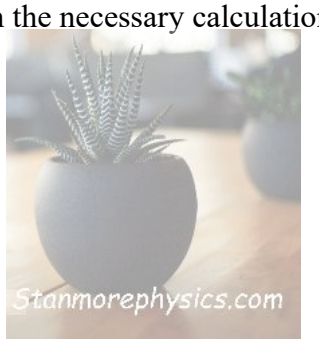
4.2.2 Measure the distance, in mm, between Christchurch Greyfriars Garden and Green Park. (2)

4.2.2 Kevin claims that the difference between the number of e-toll gates and the number of tourist attractions on the map is zero.

Verify, with the necessary calculations, whether Kevin's claim is VALID. (4)

[24]

TOTAL: 100



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MATHEMATICAL LITERACY P2 ADDENDUM

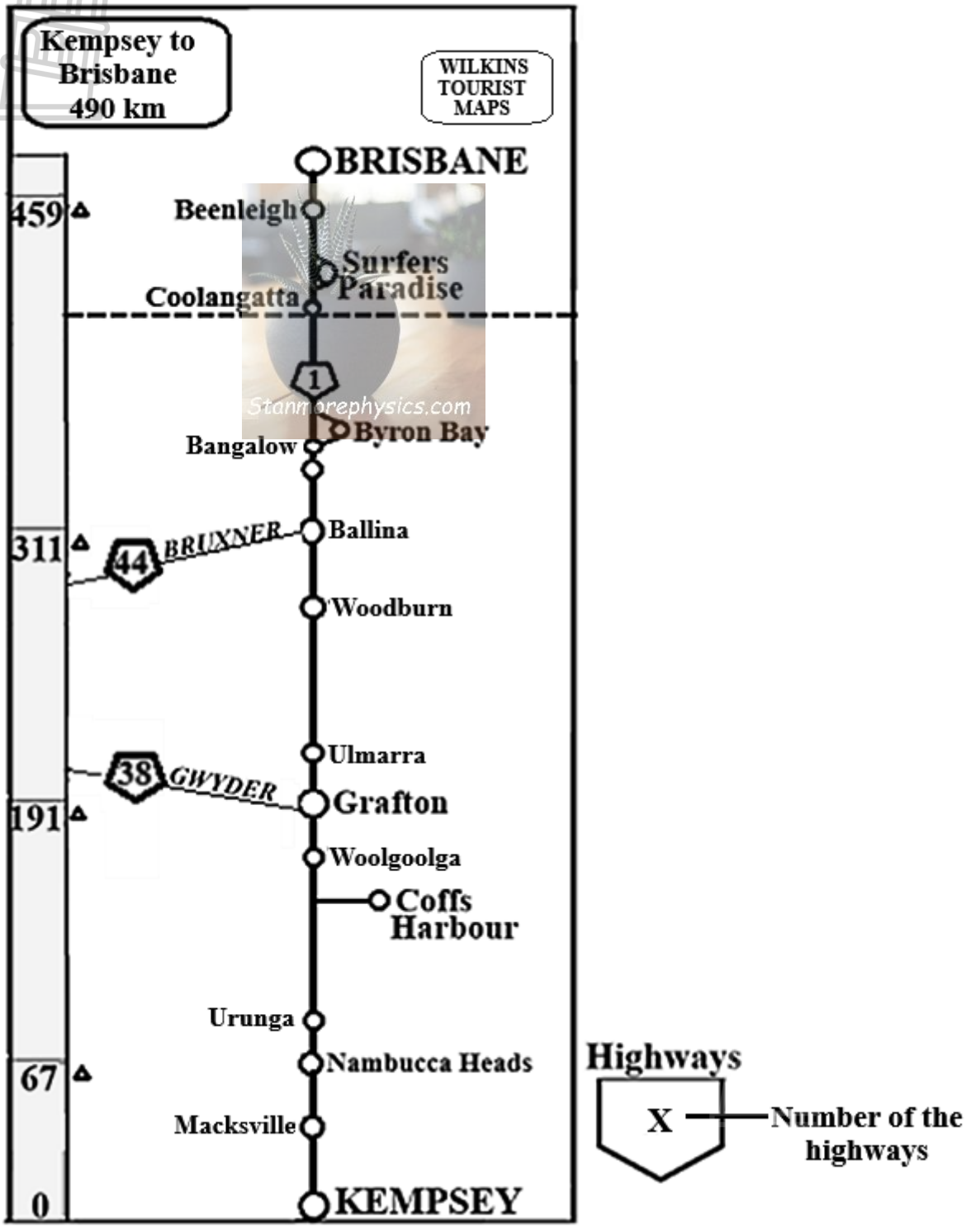
* J M L A D E 2 *

This addendum consists of 4 pages with 3 annexures.

ANNEXURE A

QUESTION 2.1

STRIP CHART FROM KEMPSEY TO BRISBANE



[Adapted from http://www.wilmap.co.au]

ANNEXURE B

QUESTION 4.1

SHARIFF AND KEVIN'S FLIGHT ITINERARY FROM JOHANNESBURG TO LONDON.

Flight	Depart/ Arrive	Time	Airport	Terminal	Duration/ Stops	Class/ Aircraft	Booking Status
EK 776	Depart Sat 05 July 2025	19:35	OR Tambo International Airport (JNB)		08 hr 10 min non-stop	Economy Boeing 777-300ER	Confirmed
	Arrive Sun 06 July 2025	05:45	Dubai International Airport (DXB)	3	Travel distance 3 994,13 miles		
	✈✈✈Connection						
EK 001	Depart Sun 06 July 2025	08:00	Dubai International Airport (DXB)	3	08 hr 05 min non-stop	Economy Airbus A380-800	Confirmed
	Arrive Sun 06 July 2025	12:05	London Heathrow Airport (LHR)	3	Travel distance 5 505 km		

** All times given are in local times, i.e. the time it will be in that country.*
** NOTE: Dubai - United Arab Emirates, is two hours ahead of Johannesburg.*

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ANNEXURE C

QUESTION 4.2

MAP OF LONDON AND SURROUNDING AREAS



Key	
	e-toll gates
	Tourist attractions
	Parks

[Source: www.googlemaps.co.za]

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