KWAZULU-NATAL PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA




# NATIONAL SENIOR CERTIFICATE

## GRADE 12




## MATHEMATICAL LITERACY P2

## COMMON TEST

## JUNE 2022

**MARKS: 100**

**TIME: 2 hours**

**This question paper consists of 8 pages and an Addendum with 3 Annexures.**

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**INSTRUCTIONS AND INFORMATION**

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 2.2
   - ANNEXURE C for QUESTION 4

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 necessarily drawn to scale unless stated otherwise.

10. Write neatly and legibly.

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**QUESTION 1**

1.1 The tide, time, and height of the tide for Durban are shown in TABLE 1 below.

**TABLE 1: TIDE FORECAST FOR DURBAN**

**Today's tide times for Durban: Friday 01 April 2022**

| Tide | Time (SAST) & Date | Height |
|---|---|---|
| High Tide | 3:55 AM *(Fri 01 April)* | 2.09 m *(6.86 ft)* |
| Low Tide | 10:04 AM *(Fri 01 April)* | 0.18 m *(0.59 ft)* |
| High Tide | 4:07 PM *(Fri 01 April)* | 2.02 m *(6.63 ft)* |
| Low Tide | 10:12 PM *(Fri 01 April)* | 0.15 m *(0.49 ft)* |

Tide Datum: Mean Lower Low Water

[Source:www.tide-forecast.com]

downloaded from stanmorephysics.com

Use TABLE 1 above to answer the questions that follow.

1.1.1 Which date is this tide forecast for? (2)

1.1.2 Identify the tide at 10:12 pm. (2)

1.1.3 Write the time in Question 1.1.2 in 24-time format. (2)

1.1.4 Identify the height of the lowest tide in meters. (2)

1.1.5 Calculate the difference in time between the High Tide and Low Tide in the morning. (3)

Downloaded from Stanmorephysics.com

1.2 The layout plan of a shopping mall is given below.







**Scale 1:5 000** [Source:www.deviantart.com]

Use the layout plan of the shopping mall above to answer the questions that follow.

1.2.1 Explain the term *Layout Plan* in the given context. (2)

1.2.2 Determine the total number of shops with the smallest units (2)

1.2.3 Use the compass to determine which direction is Region 1 located. (2)

1.2.4 Identify the type of scale used on the layout plan. Explain the meaning of the given scale in the given context. (3)

**[20]**

**QUESTION 2**

2.1 Sizwe is travelling to Johannesburg for business. A map showing the distance from Durban to Johannesburg is shown in ANNEXURE A.

Use the map in ANNEXURE A to answer the questions that follow.

2.1.1 Identify the type of map shown in ANNEXURE A. (2)

2.1.2 Explain why this map cannot be used to measure the length between places to determine the actual distance. (2)

2.1.3 List the national roads found on this map. (3)

2.1.4 Determine the distance between Escort and Harrismith. (3)

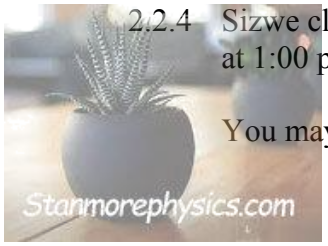
2.2 After his business was done, Sizwe wanted to visit a friend in Maputo. A map showing Johannesburg and the surrounding areas is shown in ANNEXURE B.

Use the map in ANNEXURE B to answer the questions that follow

2.2.1 Identify the type of scale shown on the map in ANNEXURE B. (2)

2.2.2 Measure the scale and write it in the form **1:…** (2)

2.2.3 Measure the distance between Pretoria and Maputo.
Hence, use the scale to determine the actual distance from Pretoria to Maputo in km. (3)




2.2.4 Sizwe claims he was travelling at 120 km/h. Verify this claim if Sizwe left Pretoria at 1:00 pm and reached Maputo at 4:45 pm.

You may use the formula:

**Distance = speed × time** (4)

**[21]**

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**QUESTION 3**

3.1

The dimensions of a 20-litre paint bucket are shown below. The diameter of the paint bucket is 332 mm. The paint buckets are loaded onto a wooden pallet to be transported to the store.

| **Diameter = 332 mm** | **Paint buckets on a Wooden pallet** |
|---|---|
|  |  |

**NOTE:1 litre = 1000 cm$^3$**

Use the diagram above to answer the questions that follow




3.1.1 "The height of the paint bucket is 30 cm."

Determine the height of the 20-litre paint bucket to verify if this statement is correct.

You may use the formula: (8)

**Volume = 3.142 × r$^2$ ×height**

3.1.2 Calculate the total volume of the paint on the pallet in kilolitres. (4)




3.1.3 Determine the total area all the paint will cover, if 1 litre covers 5 m$^2$. (3)

3.2

The pallet of paint needs to be shrink-wrapped to transport it to the stores.

Dimension of the pallet:

Length = 1.4 m

Width = 1 m




**NOTE: Shrink wrap is the plastic used to cover and protect goods during transportation.**

Use the diagram above and answer the questions that follow.

3.2.1 Determine the total height of the pallet and the two paint buckets. (3)

3.2.2 Calculate the total surface area in $m^2$ of the pallet and paint buckets that need to be shrink-wrapped.

You may use the formula:

$$\mathbf{TSA = 2(L \times H) + 2(W \times H) + 2(L \times W)}$$

(6)

3.2.3 Shrink wrap is sold in rolls of 1 m × 1000 m. Determine the number of metres required to wrap the pallet and paint buckets. (2)

3.2.4 The paint needs to be stored in a warehouse. Determine the floor area 6 pallets of paint will cover in a warehouse. Round up your answer to the nearest metre.

You may use the formula

$$\mathbf{Area = length \times breadth}$$

(4)

**[30]**

**QUESTION 4**

The Cape Town Cycle tour covers a distance of 109 km. It starts in Hospital Bend at 06:20 and ends at 17:00 in Sea Point. The route map of the Cape Town Cycle tour is shown in ANNEXURE C. The map shows the distance to cover to reach the finish in Sea Point.

Use the information in ANNEXURE C to answer the questions that follow.

4.1 A spectator claimed the cycle tour is 11 hours. Determine the duration of the cycle race in hours and minutes to verify if this claim is CORRECT. (4)

4.2 Determine the halfway mark, and which place on the map would be closer to halfway mark. (3)

4.3 The cut-off time at Perdekloof is 14:00. A cyclist stated that from Perdekloof a 15 km/hour speed must be maintained to complete the race on time. Determine the distance to complete the race to verify if this statement is CORRECT. (5)

4.4 Determine the actual distance from Hospital Bend to Constantia. (3)

4.5 Measure the distance from Hospital Bend to Constantia and use this distance to determine the number scale of the map. (4)

4.6 The organisers estimated that there would be 22 000 entrants this year. Local cyclists and international cyclists were in the ratio of 5:6. Determine the total income received if the cost for entry is R200 per local and R1 200 per international cyclist. (6)

4.7 Determine the probability as a percentage of randomly selecting an international cyclist for this tour. (4)




**[29]**

**TOTAL MARKS: 100**

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## ADDENDUM

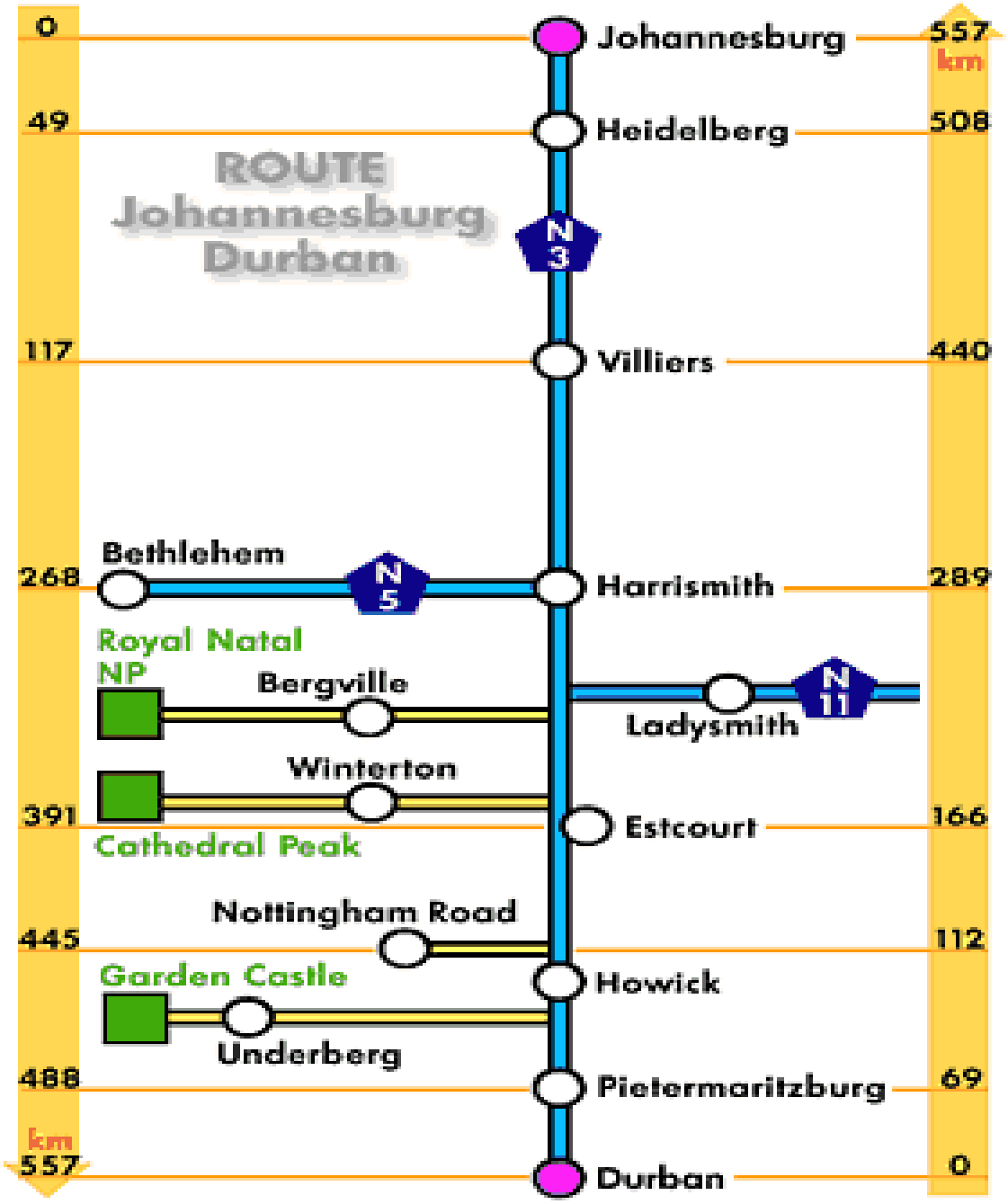
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**This Addendum consists of 4 pages with 3 Annexures**

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**ANNEXURE A**

**QUESTION 2.1**




**[Source:www.suedafrika.net]**

**ANNEXURE B**

**QUESTION 2.2**

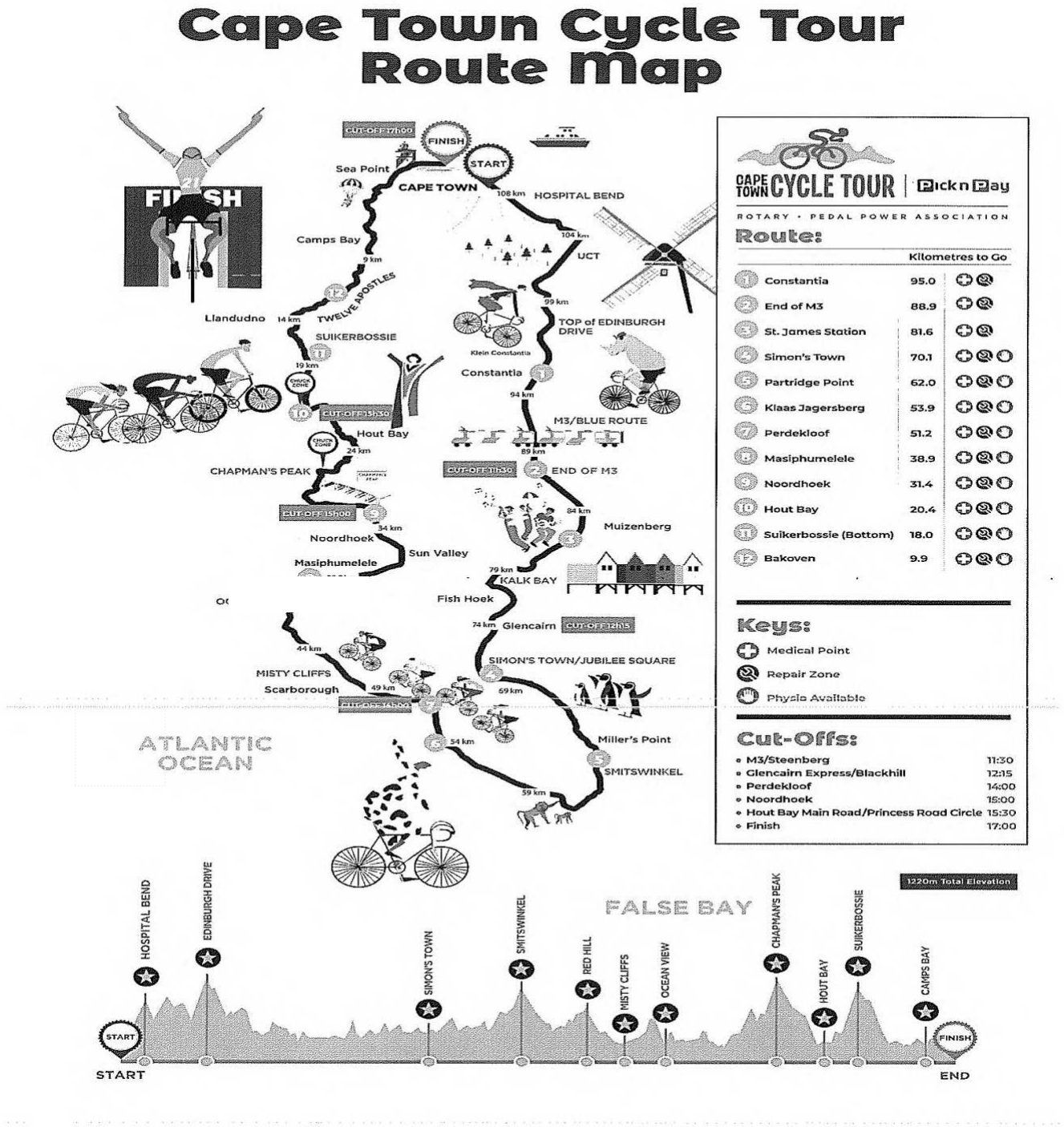



**[Source:www.britanica.com]**



**ANNEXURE C**

**QUESTION 4**




[Source:www.news24.com]

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