Province of the
EASTERN CAPE
EDUCATION

NATIONAL SENIOR CERTIFICATE

GRADE 12

JUNE 2021

MATHEMATICAL LITERACY P2 (EXEMPLAR)

MARKS: **100**

TIME: **2 hours**

This question paper consists of 7 pages and an addendum with 3 pages.

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 ADDENDUM with ANNEXURES for the following questions:
   ANNEXURE A for QUESTION 2.1
   ANNEXURE B for QUESTIONS 1.1 and 2.2

3. Number the questions correctly according to the numbering system used in this question paper.

4. An approved calculator (non-programmable and non-graphical) may be used, unless stated otherwise.

5. Show ALL calculations clearly.

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

7. Indicate units of measurement, where applicable.

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

9. Start EACH question on a NEW page.

10. Write neatly and legibly.

QUESTION 1

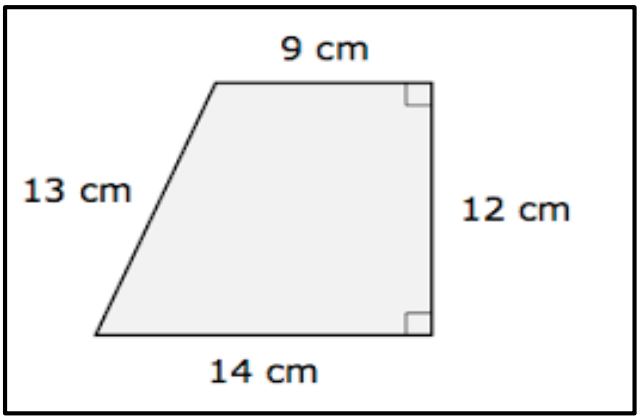
1.1 The strip chart in ANNEXURE B shows the distance between Cape Town and Springbok. Answer the questions below based on the map.

1.1.1 What is the distance between Cape Town and Springbok in metres? (2)

1.1.2 Which national roads are shown on this map? (2)

1.1.3 How many regional roads are on this map? (2)

1.2



1.2.1 Define the term *perimeter*. (2)

1.2.2 Calculate the perimeter of the figure in QUESTION 1.2. (2)

1.2.3 Write the shortest side as a ratio of the longest side (2)

1.2.4 What is the difference between the two sides with odd number dimensions? (2)

1.3 Sipho is a regular marathon runner, and he has just finished 42,2 km in 4,7 hours.

1.3.1 What is the marathon distance in cm? (2)

1.3.2 How many minutes did it take him to finish the marathon? (2)

1.3.3 If Sipho's friend is finished only 0,75 of the total marathon distance, what distance in km was he able to run? (2)

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QUESTION 2

2.1 Mr and Mrs May attended the final match of the 2019 Rugby World Cup in Japan. They were provided with a map as shown in ANNEXURE A. Use the ADDENDUM with the map in ANNEXURE A to answer the questions below.

2.1.1 Give the TWO general directions that they will use if they first travel from Kamaishi Recovery Memorial Stadium to Umakana Yokana Stadium and thereafter to the International Stadium Yokahama. (4)

2.1.2 Calculate the actual distance in kilometres between Umakana Yokana Stadium and Kamaishi Recovery Memorial Stadium. (4)

2.1.3 Write the scale of the map as a unit ratio in the form 1 : … rounded to the nearest million. (3)

2.1.4 Give ONE possible reason why there is no indication of different stadiums in Russia, China, South Korea and North Korea (2)

2.1.5 Which country is north-east of South Korea? (2)

2.2 The map in ANNEXURE B shows the distance between Cape Town and Springbok. Answer the questions, based on the map, below.

2.2.1 On the map, the distance between Clanwilliam and Citrusdal, and that between Piketburg and Malmesbury, seem to be equal. With calculations prove if they are equal. If not, give a reason for this. (5)

2.2.2 Give directions from Vanrhynsdorp to Ceres by mentioning the national roads and regional roads (3)

2.2.3 What is the probability of choosing an even-numbered road from the regional roads? (2)

2.2.4 Sipho travelled from Malmesbury to Springbok. Prove if he was within the accepted speed limit if it took him 4 hours and 30 minutes to reach his destination.

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

NOTE: Accepted speed limit is 120 km/hr. (5)

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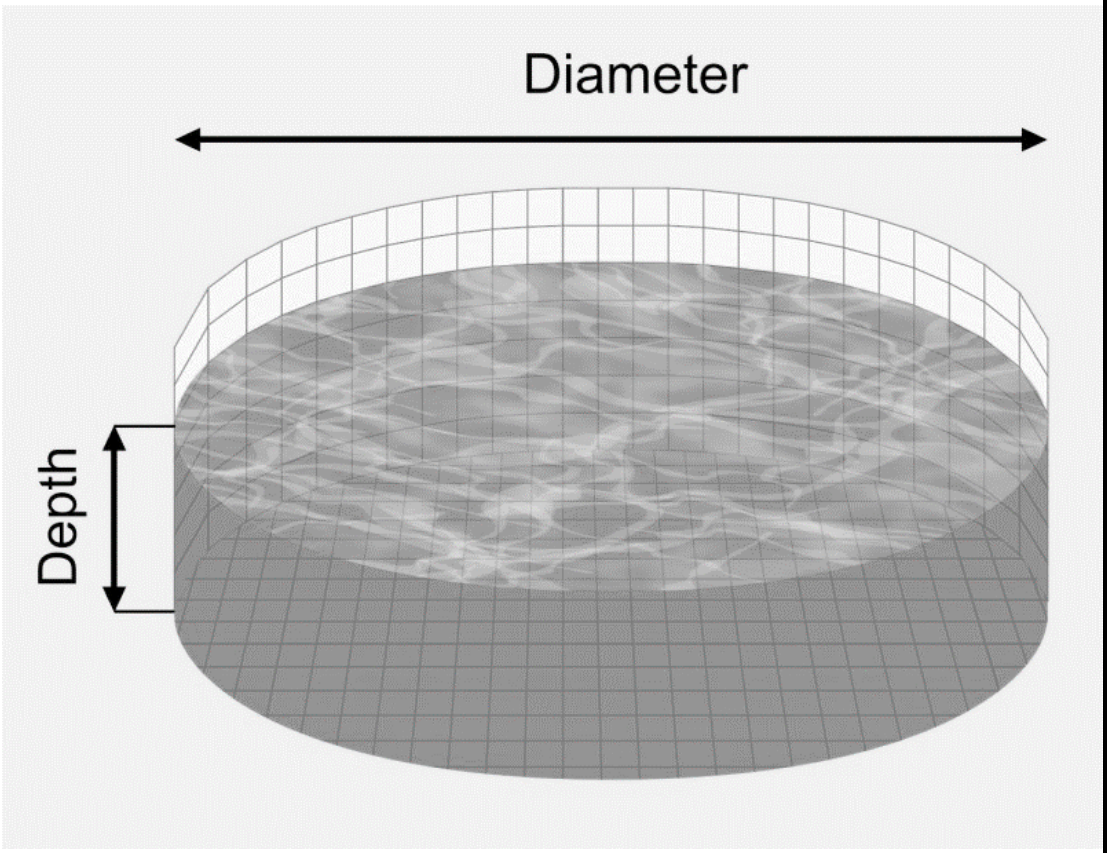
QUESTION 3

3.1 A family, living in a suburb, has a circular swimming pool with dimensions as shown below. The pool is situated in the middle of the yard and it also has a circular fence around it. The fence is 2 metres from the pool.



Dimensions:
Diameter = 480 cm

You may use the following formulae:

Volume of circular pool = π × radius × radius × depth, where π = 3,142

Circumference of the fence = 2 × π × radius, where π = 3,142

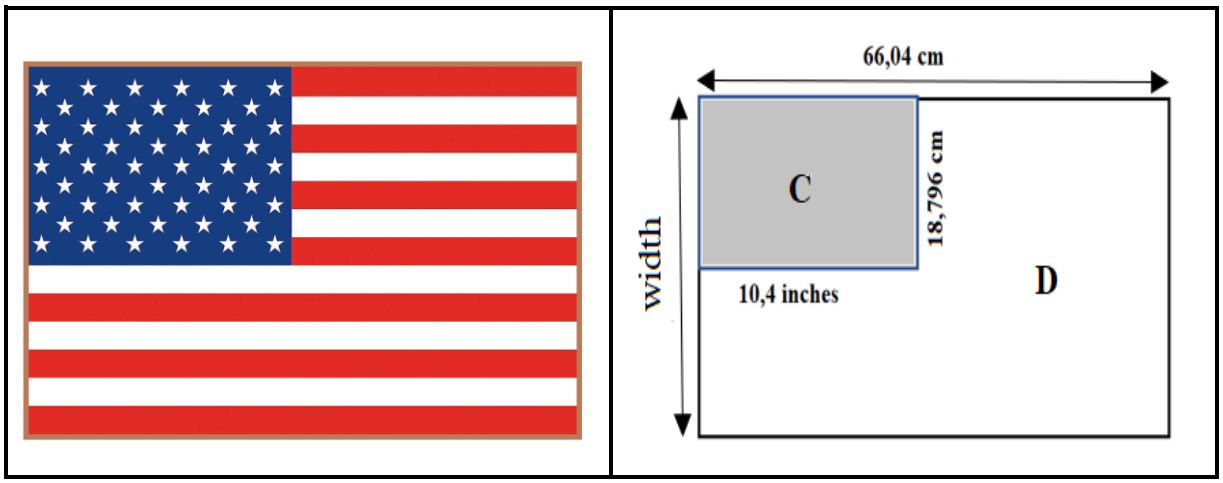
1 m^3 = 1 000 litre

3.1.1 The capacity of the pool is 30 000 litres. Calculate to the nearest metre the depth of the pool. (7)

3.1.2 To clean the pool, they use HTH (a chemical). The chemical is sold in 10 kg bags. They use 40 g of chemical per 10 000 litres water per day. Verify, with the necessary calculations, whether the 10 kg bag will be enough for March. (5)

3.1.3 The labour cost for the fencing, including the gate, is R125 per metre. Calculate the cost for fencing the pool. (4)

3.2 Lwando bought an American flag mounted on a rectangular wooden frame shown in diagrams below.



[hertoolbelt.com]

Study the diagrams above and answer the questions below.

3.2.1 Write down the length of section C of the flag. (2)

3.2.2 Calculate the area (in cm^2) of section C of the flag. Give your answer to one decimal place.

You may use 1 inch = 2,54 cm (5)

3.2.3 Calculate the width of the front view of the wooden frame if the perimeter of the frame is 201,93 cm.

You may use the following formula:

$$\frac{\textbf{Perimeter}}{\textbf{2}} = \textbf{length} + \textbf{width}$$

(3)
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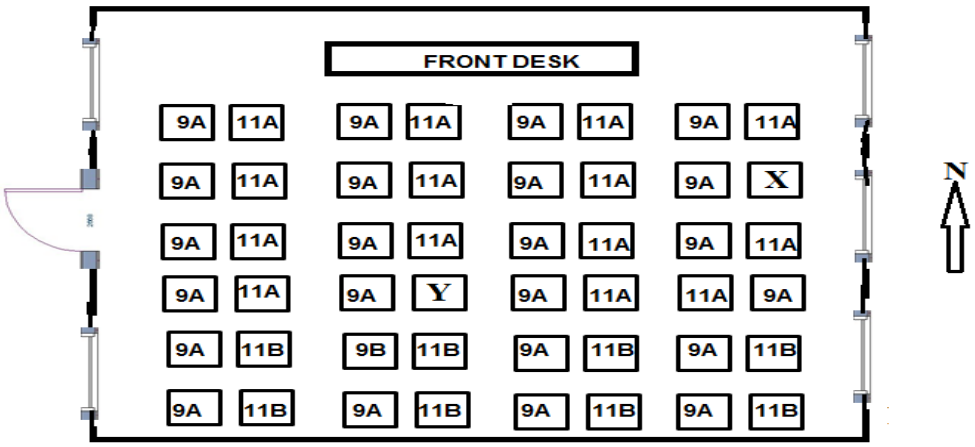
QUESTION 4

4.1 Study the seating plan below that will be used for examination purposes at Nhuzayo High School for Grade 9 and 11 learners. Answer the questions that follow.



(Desks labelled X and Y were not used.)

4.1.1 Determine the number of Grade 9 learners that will be seated for the examination. (2)

4.1.2 What is the probability of choosing a Grade 11B learner from the total number of learners seated in the examination room?

Give your final answer as a simplified fraction. (3)

4.1.3 Determine the number of windows on the west side of the building. (2)

4.1.4 Write the number of the empty desks as a percentage of the total number of desks in the examination room. Give your answer rounded to two decimals. (3)

4.2 A family travelled 135 km from East London to Centane. On their way, they stopped in Butterworth for 25 minutes.

4.2.1 If they travelled at an average speed of 98 km per hour, determine how long in hours and minutes it took them to arrive in Centane.

You may use the formula: **Distance = Speed × Time** (5)

4.2.2 The family travelled in a car with a petrol capacity of 50 litres. The car's petrol consumption is usually 12 kilometres per litre.

The family has claimed that when leaving East London with a full tank of petrol, they would be left with less than 30 litres of petrol in the tank on reaching their destination. Verify, with the necessary calculations, whether their claim is valid or not. (5)

4.2.3 Calculate their petrol cost for a return trip if petrol is 1 650 cents per litre. (4)

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TOTAL: 100