education

Department of Education
FREE STATE PROVINCE

GRADE 12

MATHEMATICAL LITERACY

PAPER 2

MAY-JUNE 2024

MARKS: 100

TIME: 2 HOURS

This question paper consists of 11 pages and an addendum with 2 ANNEXURES.

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INSTRUCTIONS AND INFORMATION

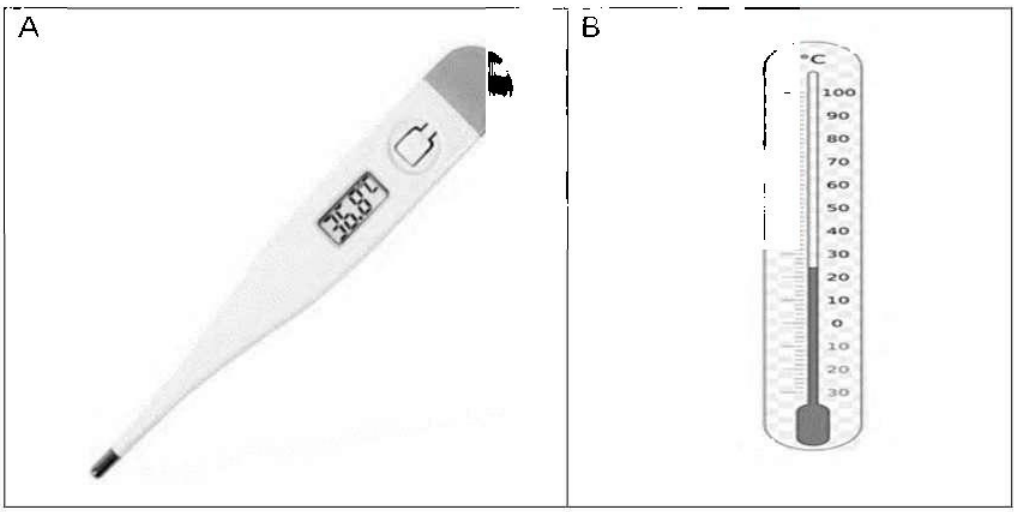
1. This question paper consists of FOUR questions. Answer ALL the questions.
2. 2.1 Use ANNEXURE A in the ADDENDUM to answer QUESTION 2.3.

   2.2 Use ANNEXURE B in the ADDENDUM to answer 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.
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. Diagrams are NOT necessarily drawn to scale, unless stated otherwise.
10. Write neatly and legibly.

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QUESTION 1

1.1 Eunice bought the instruments below to monitor her child's temperature.



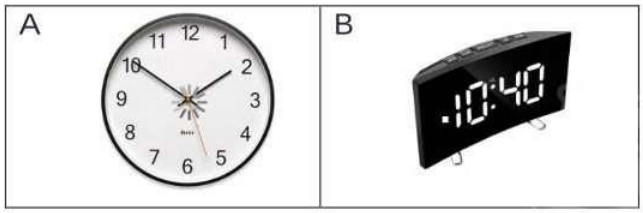
Study the pictures above and answer the questions that follow.

1.1.1 Write down the name of instruments represented above. (2)

1.1.2 Read the temperature displayed on instrument **A**. (2)

1.1.3 Identify the instrument (A or B) that shows the lowest temperature. (2)

1.2 During the check-up visit, the doctor advised Eunice that having a regular schedule during the day can help her child's sleep stay on track. Eunice uses the two types of clocks below to monitor the time.



Use the information above to answer the questions that follows.

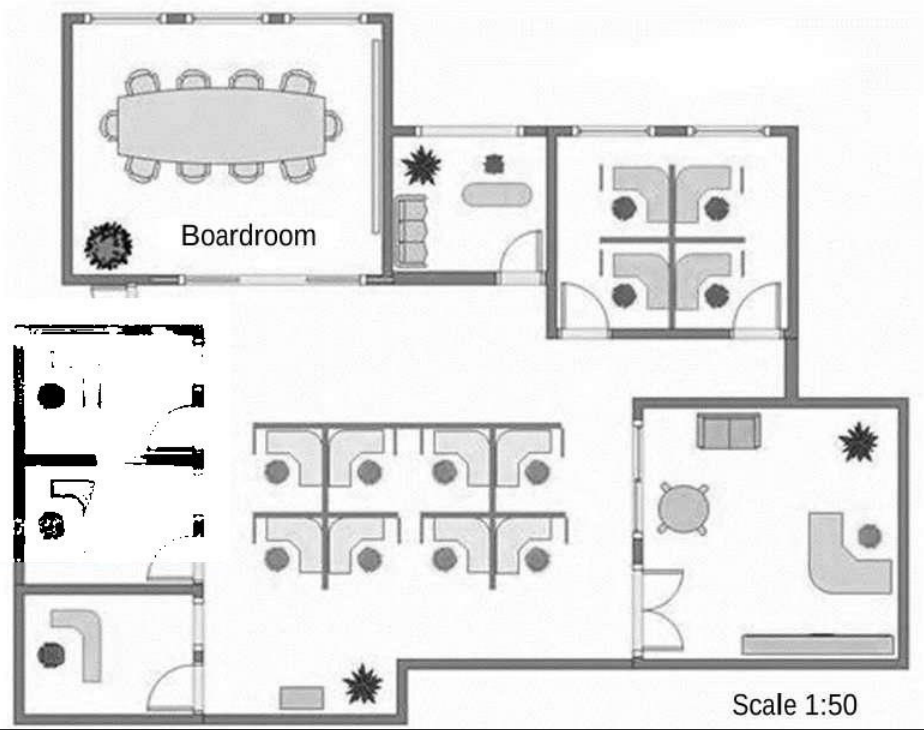
1.2.1 Write down the time displayed on clock B in words if the time format for the clock is 24-hour time.. (2)

1.2.2 The child slept at the time displayed on clock A in the afternoon. Write down the time in 24-hour format. (2)

1.2.3 Eunice went to Heilbron with the child to visit her mom. She left her home at the time displayed on clock B and arrived in Heilbron at 14:10. Determine the time, in hours, taken to reach her home (2)

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1.3 Eunice works for a small company. The picture below shows the floor plan of their office space.



Study the information above and answer the questions that follow.

1.3.1 Write down the name and the meaning of the scale on the plan. (2)

1.3.2 Explain the meaning of floor plan using the context above. (2)

1.3.3 Write down the maximum number of people who can sit around the table in the boardroom. (2)

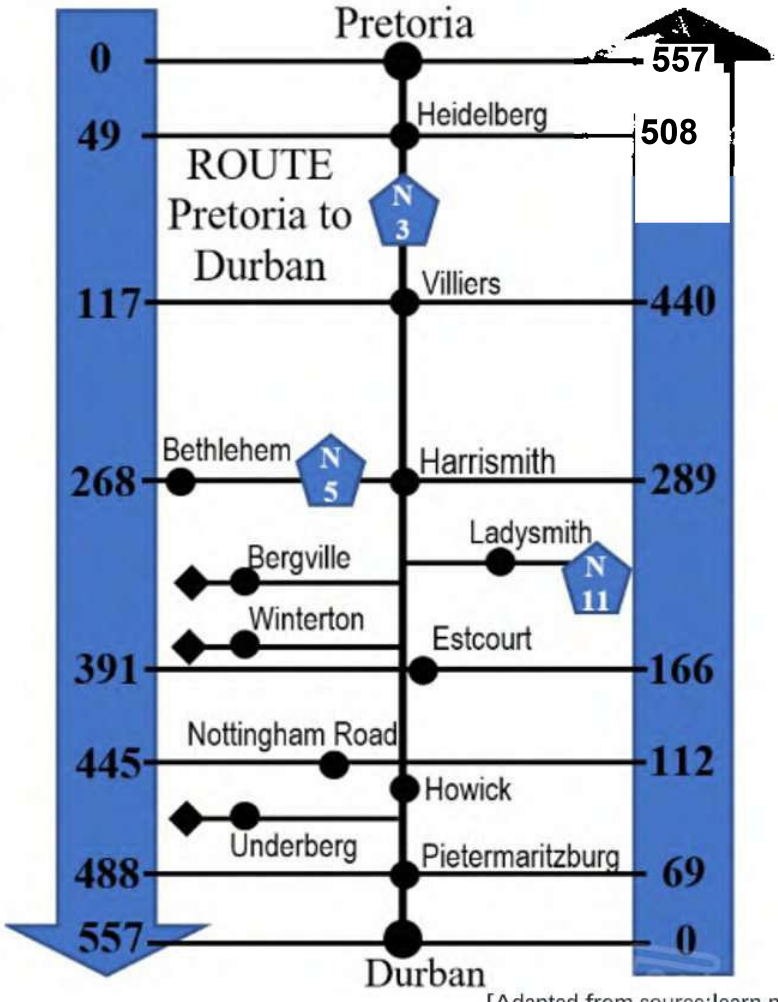
1.3.4 State whether the following statement is TRUE or FALSE.

The layout plan of the office is an example of 3-Dimensional plan. (2)

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QUESTION 2

2.1 Kgotso and his friends travelled from Pretoria to Durban to participate in the Comrade's marathon on 9 June 2023. They used the map below to plan their trip.



[Adapted from source:learn.mindset.africa]

2.1.1 Write down the total distance that Kgotso and his friends travelled to attend the marathon. (2)

2.1.2 Choose the correct letter A, B or C that does **NOT** apply to this type of map.

A: The map is not drawn to scale

B: The actual distances are displayed

C: The roads are NOT displayed with straight lines (2)

2.1.3 Write down the national road that connects Pretoria and Durban. (2)

2.1.4 It is recommended that during a trip, drivers must take a break after they have travelled 200 km. Kgotso and his friends made their first stop at Harrismith, thereafter, they travelled for another 220 km. Write down the name of the place where they stopped. (2)

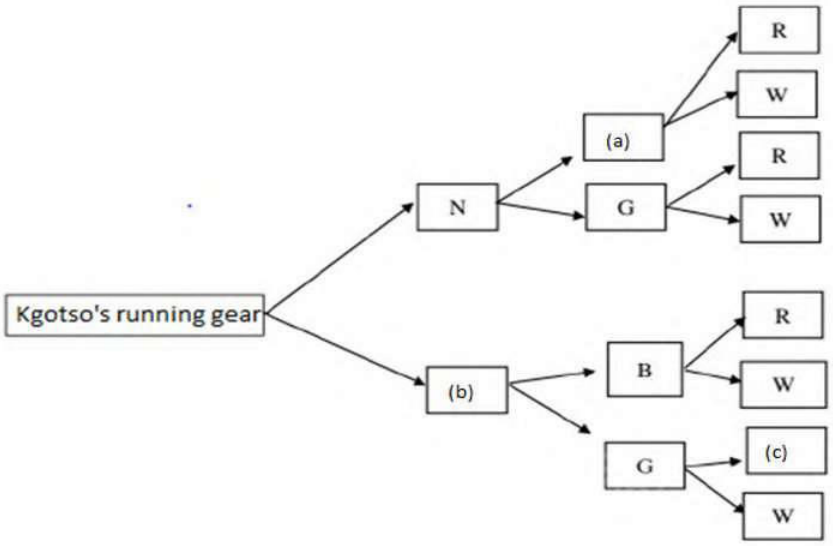
2.2 Kgotso packed 2 sets of running gear to choose from on the day of the marathon.

Running shoes: Nike (N) or Asics (A)

Running shorts: Black (B) or Green (G)

Running vests: Red (R) or White (W)

2.2.1 Complete the tree diagram below by filling in the correct letters in the place of (a), (b) and (c).



(3)

2.2.2 Determine the probability that Kgotso will use Nike shoes, Black running short, and a White vest on the day. Write down your answer as a common fraction. (2)

2.3 Mr Naidoo, who stays in Durban decides to go to Richard's Bay to go and fish there. Use ANNEXURE A to answer the questions that follow.

2.3.1 Determine the general direction from Durban to Richard's Bay (2)

2.3.2 Write down ONE advantage of the scale shown on the map. (2)

2.3.3 Convert the bar scale on the map to a ratio scale in unit form, i.e 1:….. (4)

2.3.4 Mr Naidoo is saying that the approximate distance between Durban and Richard's Bay on the map differs from the distance between the two places given in the distance table below. Use the map in ANNEXURE A, accurate measurement and the distance table below to verify his statement.

Durban				
236	Ladysmith			
170	336	Richard's Bay		
356	422	195	Sodwana Bay	
134	366	303	492	Margate

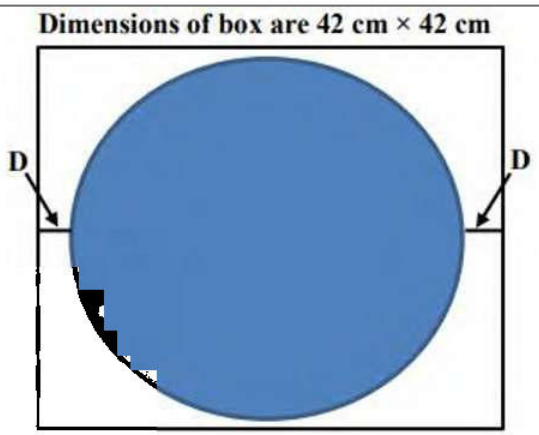
(6)

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QUESTION 3

3.1 On their way to Durban, Kgotso and his friends stopped to buy pizza. The pizza has a diameter of 40 cm and it is 20 mm thick. It was cut into 8 equal slices and served in a square box shown on the diagram below.





You may use the following formulae:

Area of a square = side × side

Area of a circle = 3,142 × radius^2

Volume of cylinder= 3,142 × radius^2× height

Use the information above to answer the questions that follow.

3.1.1 Calculate the area of the pizza box in cm^2. (2)

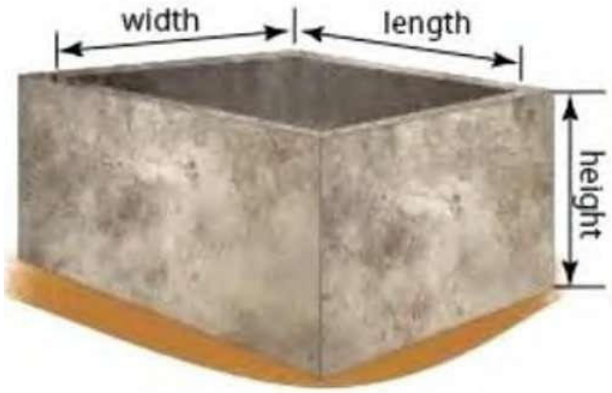
3.1.2 Determine the value of D. (3)

3.1.3 Calculate the volume of the pizza. (4)

3.1.4 Show by means of calculations that the area of **ONE** slice of pizza will be 157,1 cm^2 (2)

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3.2 Mr Dlamini makes rectangular water troughs for his animals on the farm. The concrete walls of the trough are 1 foot thick. The diagram below shows the external dimensions of the trough with an open top.



The dimensions of the tank
Length = 8 feet
Height = 5 feet
Width = 6 feet

Use the information above to answer the questions that follow.

3.2.1 Calculate the perimeter of the bottom of the trough.

You may use the formula:
Perimeter = 2 × (length + width) (2)

3.2.2 Calculate the internal dimensions of trough. (4)

3.2.3 Hence, calculate the internal volume of the trough.

You may use the formula:

Volume = Length × Width × Height (3)

3.2.4 Mr Dlamini claims that 3 litres of paint will be enough to paint the internal surface of the trough. Verify using calculation whether his claim is correct.

1,785 litres of paint cover approximately 65 feet^2.

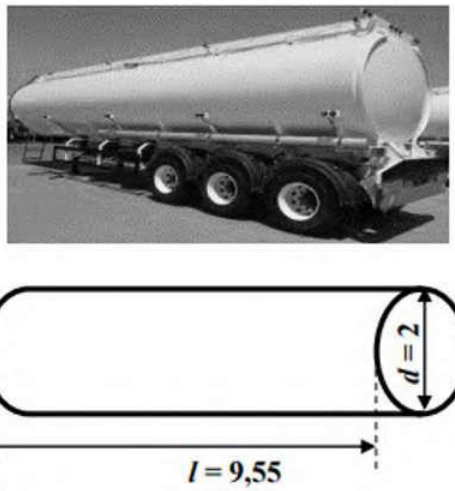
You may use the formula:

Surface area of a rectangular prism
= (length × width) + 2 (length × height) + 2 (width × height) (4)

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QUESTION 4

4.1 Mr Molebatsi bought a second hand 30 000 litres oil tanker trailer as shown in picture A below. It is used to transport oil from Cape town harbour to the oil refinery in Johannesburg.

Picture A: Oil tanker trailer	Picture B: Oil barrel
	
l = length in meters **d = diameter in meters**	**1 barrel = 42 US gallons** **1 litre = 0,264172 US gallons**

4.1.1 Calculate in litres, the amount of oil 1 barrel can hold. Round off to the nearest litre. (3)

4.1.2 The salesman told Mr Molebatsi that the tank can hold 190 barrels of oil. Verify showing all calculations if he is correct. (5)

4.1.3 The distance between Johannesburg and Cape town is 1398 km. The tanker trailer uses diesel at an average of 24ℓ per 100 km. The diesel price at the depot is R20,20 per litre. Mr Molebatsi claim that his cost for a return trip is R13 000. Verify with calculation whether his statement is correct. (7)

4.1.4 The driver who is driving from Johannesburg to Cape Town to deliver the oil drives at an average speed of 80km/h. He makes three stops of 20 minutes each along the road to take a break. If he leaves Johannesburg at 10:30 in the morning, write down the time he will arrive at Cape Town.

You may use the following formula:

Distance =Speed × Time (7)

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4.2 Karabo and her friends went to an opera performance at the SA State Theatre in Pretoria. Use the seating plan of the theatre on ANNEXURE B to answer the following questions.

4.2.1 How many exits are available for the performers and the orchestra? (2)

4.2.2 Write down the number of seats indicated as Zone C. (2)

4.2.3 Explain to Karabo's friend who is seated at F4, the shortest distance to move from F4 to R24 where Karabo is seated. (3)

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TOTAL: 100

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