BERGVLIET HIGH SCHOOL

Mathematical Literacy: Paper 2

GRADE:	**10**	**DATE:**	**30 NOVEMBER 2023**
EXAMINER:	**MR B SILJEUR**	**TIME:**	**1,5 HOURS**
MODERATOR	**MR P FURSTENBURG**	**MARKS:**	**75**

QUESTION	ASSESSMENT MARKS
1	17
2	21
3	15
4	10
5	12
TOTAL	75

Instructions:

- Answer all the questions.
- Read each question carefully and answer all questions.
- Use **BLACK** or **BLUE** ink only and no correctional fluid is permitted.
- Please write neatly and legibly.
- Round to two decimal places unless stated otherwise.

This question paper consists of **8 pages** including the cover page.

QUESTION 1

1.1 Water has become a critical issue in South Africa, especially in the Western Cape and the Eastern Cape, where dam levels have dropped tremendously over the past few years.

Below is a table showing the major supply dams in the Western Cape.

TABLE 1:
Water storage in the major dams comprising Western Cape water supply system

Major dams	Storage					
	Capacity ($M\ell$) Mega-litre	% 25 June 2018	% 25 June 2017	% 25 June 2016	% 25 June 2015	% 25 June 2014
Berg River	130 010	67,8	36,5	38,7	60,0	100,2
Steenbras Lower	33 517	46,5	30,2	37,1	55,4	72,6
Steenbras Upper	31767	96,5	60,6	65,8	57,4	101,3
Theewaterskloof	480 188	30,4	18,6	33,9	54,9	98,5
Voëlvlei	164 095	37,6	18,4	27,4	39,2	81,6
Wemmershoek	58 644	71,2	37,5	50,1	53,2	89,8
Total stored	898 221	383 263	218 433	320 741	474 301	846 413
% Storage		**A**	24,3	35,7	52,8	94,2

***The last 10% of a dam's water is difficult to use, so the usable water in the dam is approximately 10% less than the dam level.**

Use TABLE 1 above to answer the questions below.

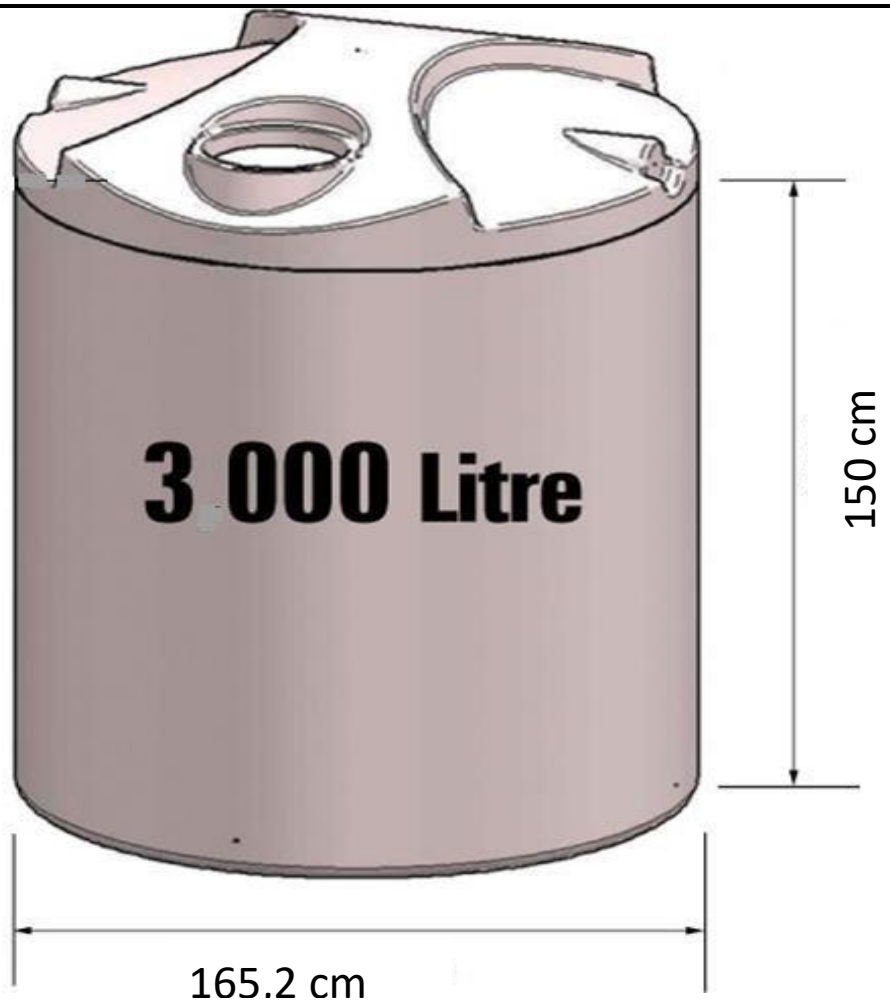
1.1.1 Determine the value of **A (the percentage storage for 25 June 2018).** (3)

1.1.2 Describe a possible trend for the period in terms of the total water stored. (2)

1.1.3 Give **ONE** possible reason for the low dam levels from 2015 to 2017. (2)

1.1.4 Calculate the probability that a dam will have 45% or more water stored on 25 June 2018. Write your final answer to 3 decimal places. (3)

1.2 Mervyn bought a water tank to store water. Study the diagram of the water tank below and answer the questions that follow.



The water tank has the following dimensions:
Diameter = 165,2 cm
Height = 150 cm

You may use the following formula and conversion:

Volume = π × radius × radius × height; where π = 3,142

Conversion: 1 m^3 = 1 000 litres

The capacity of the water tank is advertised as 3 000 litres. Mervyn states that the advertisement is wrong and that the water tank can hold more than 3000 litres.
Verify, using calculations if Mervyn's statement is correct. (7)

[17]

QUESTION 2

Sam's uncle works for a company that puts up safety fences around swimming pools, and nets over swimming pools. He must calculate how much fencing and netting they need for the swimming pool shown below. The fencing is always 1 metre away from the swimming pool. For the swimming pool below, calculate:

2.1.1 The perimeter of the swimming pool. (2)

2.1.2 The length of fencing needed. (2)

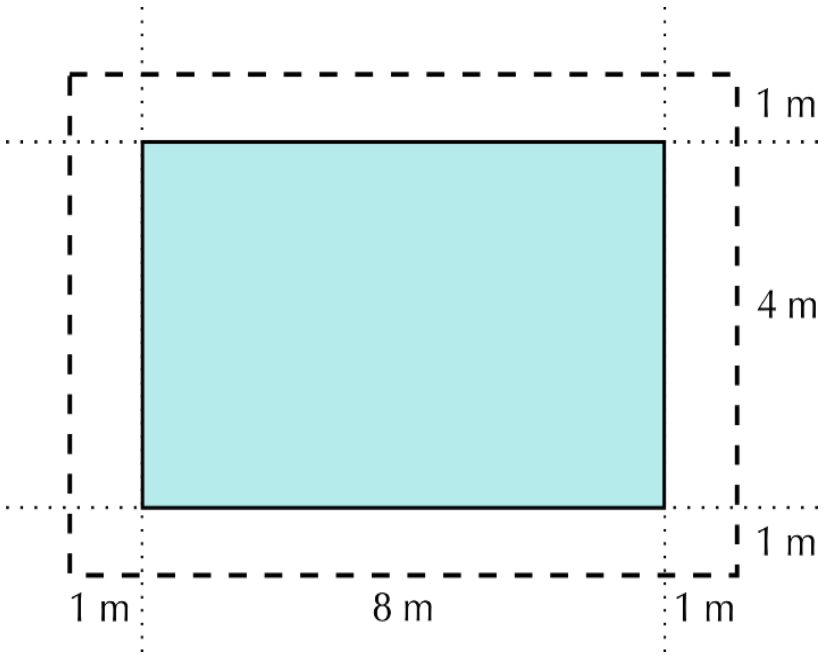
2.1.3 The area of the swimming pool (the area of netting needed).
You may use the following formula:

Area = length x breadth (3)

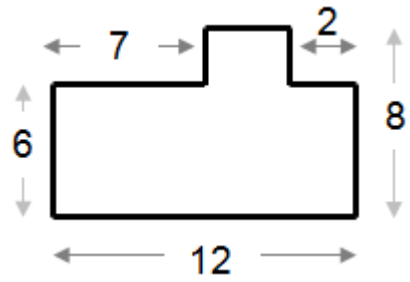
2.1.4 The cost of the fence at R250, 00 per metre. (2)

2.1.5 The cost of the netting at R199, 99 per m². (2)

Round all of your answers to two decimal places.

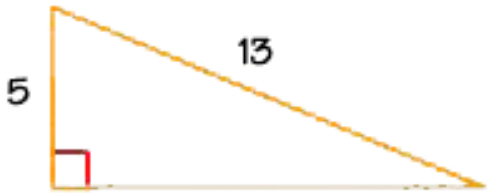


2.1 Calculate the area of the figure below:



(5)

2.2 Calculate the perimeter of the following figure:

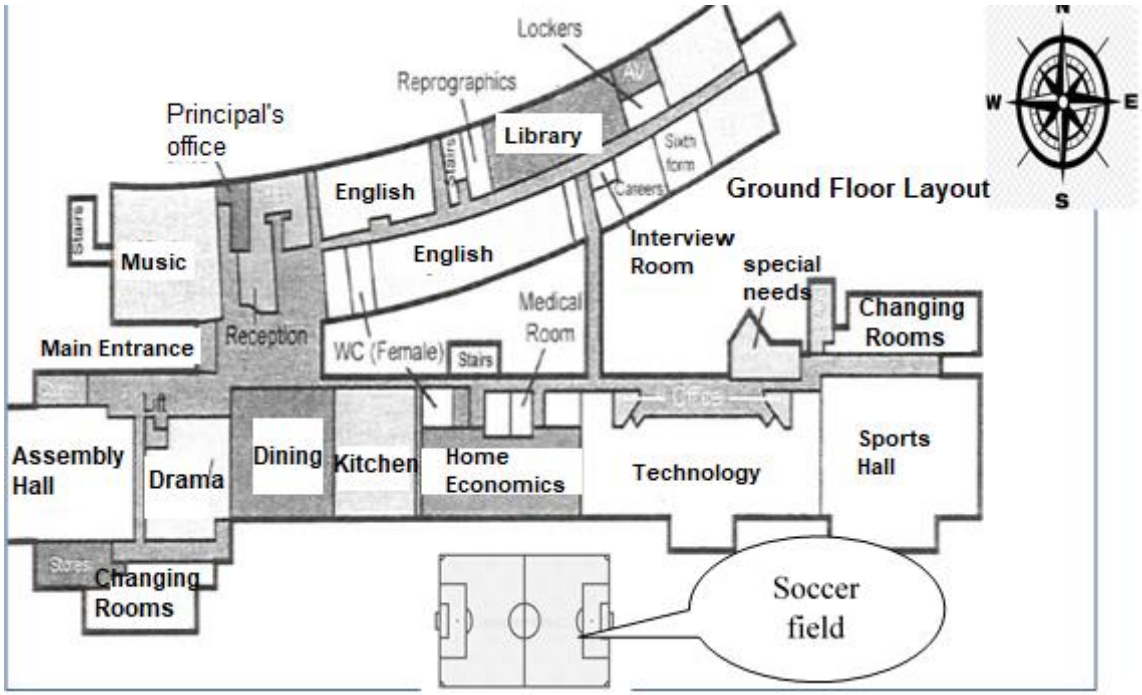


(5)

[21]

QUESTION 3

The floor plan below shows the layout of a school building.



Study the floor plan above and answer the questions that follow.

3.1 What level of the floor plan is shown on the map? (2)

3.2 How many changing rooms are there on the plan? (2)

3.3 Write down the general direction of the library from reception. (2)

3.4 If you pass the Kitchen and Home economics room on your right, turn left and then left again which department is on your left? (2)

3.5 Provide a set of directions, using direction indicators of how you would get from the Main Entrance to the Interview room? (4)

3.6 In the event of fire, the fire alarm is ringing and all learners at the school must safely assemble in one place.

Suggest a place where all learners can safely assemble and give one reason for your choice. (3)

[15]

QUESTION 4

Jade makes his own breakfast each morning. He needs water, mealie meal, salt and margarine to make the porridge.

Ingredients	5ml	12,5ml	100ml	250ml
Flour	**3g**	**8g**	**60g**	**150g**
Margarine	**5g**	**12,5g**	**100g**	**250g**
Mealie Meal	**3g**	**6g**	**50g**	**120g**
Sugar	**4g**	**10g**	**80g**	**200g**

1 cup = 250ml
1 tablespoon = 12,5ml
1 teaspoon = 5ml

4.1 The porridge needs to simmer for $\frac{1}{3}$ of an hour.
How many minutes does this equal to? (2)

4.2 How many grams of sugar make up 100ml of sugar? (2)

4.3 Jade stirs 1 tablespoon of margarine into the porridge.
How many grams of margarine is this? (2)

4.4 Before starting he boiled 1 litre of water. How many cups was this? (2)

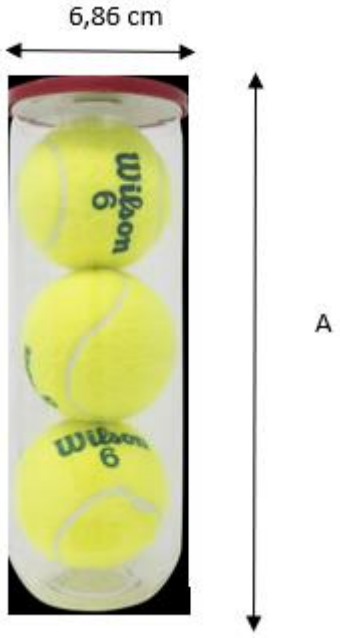
4.5 How much would the water have weighed? (2)

[10]

QUESTION 5

Ross is a Tennis coach in Melkbosstrand and needs to order tennis balls for his coaching academy.

The balls are transported from the manufacturer in containers as depicted below:



These containers are then transported in boxes with the following dimensions:
Length: 49 cm
Breadth: 21cm
Height: 52,5 cm

Use the information and the diagram above to answer the questions that follow.

5.1. Calculate the value of **A** the height of the container (rounded to the nearest cm) if three tennis balls fit exactly in the container (3)

5.2 Ross claims that 3 containers of tennis balls can fit on top of each other in one box. Verify, showing all calculations whether his statement is true or not (4)

5.3 Determine the radius of one tennis ball (in mm). Round your answer off to the nearest mm. (5)

[12]

TOTAL = 75