



**LIMPOPO**

PROVINCIAL GOVERNMENT  
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF  
**EDUCATION**

SEKHUKHUNE EAST EDUCATION DISTRICT – THE DISTRICT ON THE RISE

## MATHEMATICAL LITERACY

**GRADE 12**

**MID-TERM TEST**

**TERM 2 13 MAY 2025**

**MARKS: 50**

**TIME: 1.5 HOURS**


**This Question paper consists of 6 pages including cover page**

### **INSTRUCTIONS AND INFORMATION**

1. This question paper consists of FOUR questions. Answer ALL the questions.
2. Number the answers correctly according to the numbering system used in this question paper.
3. Round off ALL the final answers according to the context used, unless stated otherwise.
4. Indicate units of measurement, where applicable.
5. Maps and diagrams are NOT necessarily drawn to scale, unless stated otherwise.

**QUESTION 1**

1.1 Mrs Msimango is a retired Consumer Studies educator. She owns a small business of selling different types of cakes including scones. The cost price for the ingredients plus water and electricity is R0, 53 per scone. She sells scones at R2, 00 each. The recipe for baking scones is given below.

<b>INGREDIENTS (Makes 12 scones)</b>	<b>PHOTO OF SCONES</b>
<p>2 <math>\frac{1}{2}</math> cups all-purpose flour</p> <p>1 tablespoon baking powder</p> <p><math>\frac{1}{2}</math> teaspoon salt</p> <p>8 tablespoons cold butter</p> <p><math>\frac{1}{4}</math> cup sugar (uses <math>\frac{1}{3}</math> for sweeter scones)</p> <p><math>\frac{2}{3}</math> cup milk</p> <p><b>NOTE:</b> 1Cup = 250 ml 1 inch = 2,54 cm 1 tablespoon = 15 ml</p>	
<p><b>METHOD</b></p> <p>Mix dry ingredients in a large bowl. Add butter until crumbs are formed. Add milk. Place dough on floured counter pat or roll into circle about <math>1 \frac{1}{2}</math> inches thick. Cut into 12 squares. Place on a greased tray and bake at 356°F until light brown.</p>	
<p>Preparation time: 30 minutes</p>	<p>Baking time: 15 minutes</p>

Determine:

- 1.1.1 The total time (in hours) to prepare and cook the scones. (3)
- 1.1.2 The number of ml of all-purpose flour needed to bake 36 scones. (3)
- 1.1.3 The thickness of the dough in centimetres. (2)
- 1.1.4 The number of teaspoons of salt if Mrs Msimango baked 48 scones. (2)

- 1.2 The South African Weather Services provide times and heights of tides for surfers and fishermans. The table below shows the tide times in Durban beaches on Monday 08 January to Thursday, 11 January 2021.

**TABLE 1: TIDE TABLE FOR DURBAN BEACHES**

	Monday 08/01/2021	Tuesday 09/01/2021	Wednesday 10/01/2021	Thursday 11/01/2021
High Tide	08:11	09:13	10:34	02:01
Low Tide	14:24	02:38	03:49	05:20
High Tide	20:22	21:23	23:10	00:41
Low Tide	02:00	15:35	17:09	18:37



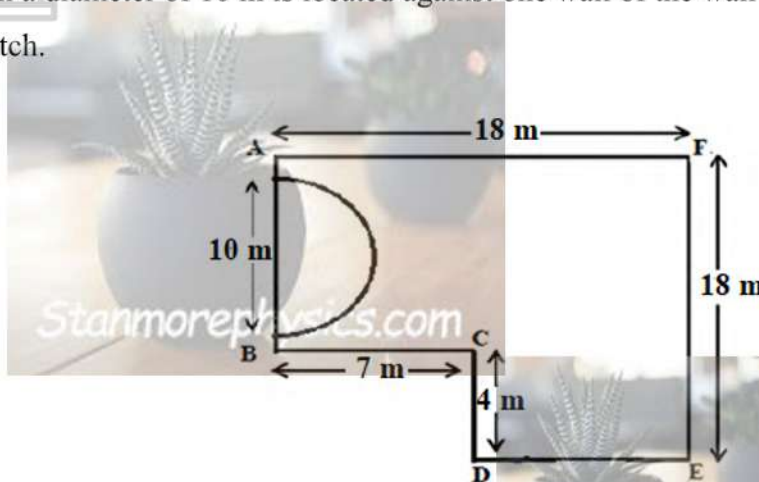
**NB:** Surfers are more interested in high tides which are during the day because no surfing is allowed at night.

- 1.2.1 The time between the day and the night high tides is ALMOST the same. (5)  
Verify, the correctness of this statement by calculating the difference between day and night tides time on Tuesday and Wednesday.
- 1.2.2 Determine the time surfers had to wait for another high tide between Monday and Tuesday. (2)

[17]

**QUESTION 2**

Mangoba High School decides to tile the floor of their school hall using black and white square (60 cm by 60 cm) tiles. The hall is L – shaped. A semi-circular stage with a diameter of 10 m is located against one wall of the wall as illustrated in the sketch.



**NB:** The stage is not going to be tiled

Use the information above to answer the questions that follow.

- 2.1 Calculate the circumference of the school hall in centimetres. (3)
- 2.2 Calculate the area of the stage. (3)  
You may use the formula: **Area of a semi- circle** =  $\frac{1}{2}\pi r^2$  , where  $\pi = 3,142$
- 2.3 The principal of the school claims that the area to be tiled is less than  $260m^2$ . Verify, whether his claim is valid. (9)

[15]

QUESTION 3

The paint is filled to 90% of the capacity of a tin. The diagrams and dimensions of the paint tin are given below.

PICTURE OF PAINT TIN	DIAGRAM OF PAINT TIN WITH DIMENSIONS
 <p>Capacity of tin = 1 000 cm<sup>3</sup></p>	 <p>Diameter = 8, 92 cm</p> <p>Source: alibaba.com</p>

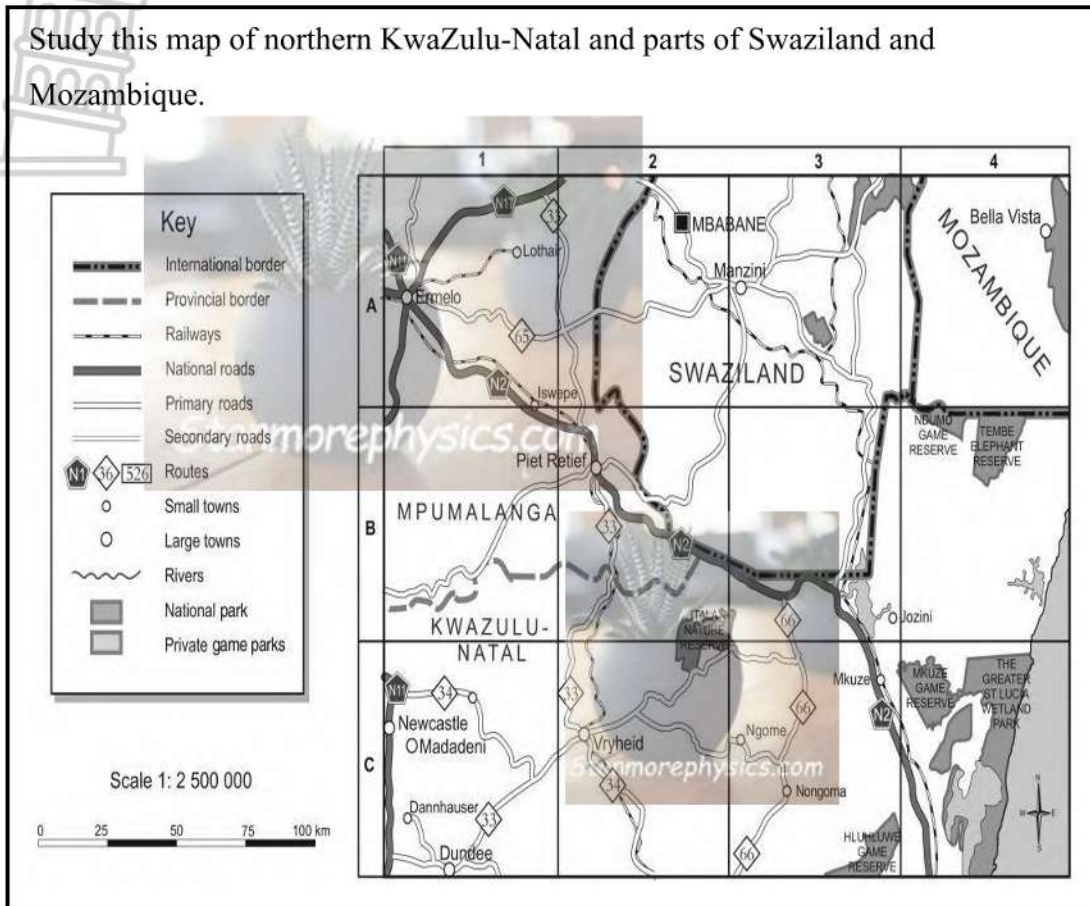
Use the information above to answer the questions that follow.

Determine:

- 3.1 The radius of the paint tin. (2)
- 3.2 The highest level reached by paint in the tin. You may use the following formula: **Volume = 3,142 × radius<sup>2</sup> × height** (4)
- 3.3 Calculate, in litres, the amount of empty space in the tin. (3)

[09]

**QUESTION 4**



- 4.1 In which grid block do you find Ngome? (2)
- 4.2 In which general direction are you travelling if you are going from Ngome to Manzini? (2)
- 4.3 Estimate the distance by road from Ermelo to Manzini. Show by calculations. (5)

**[09]**

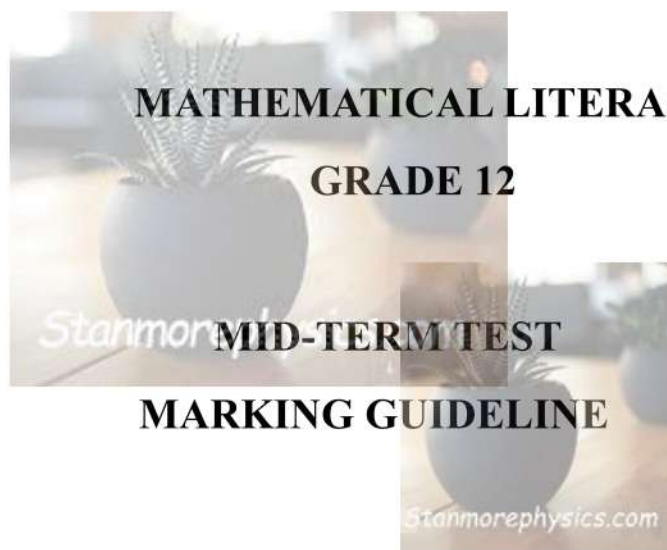
**TOTAL: 50 MARKS**



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MARKS: 50

DATE: 13 MAY 2025

This Memorandum consists of 4 pages including the cover page.

Symbol	Explanation
M	Method
MA	Method with Accuracy
CA	Consistent Accuracy
A	Accuracy
C	Conversion
S	Simplification
RT/RG/RD	Reading from a table/ graph/diagram/map
SF	Correct substitution in a formula
O	Opinion
J	Justification/ Reason/ Deduction
P	Penalty, e.g. for no units, incorrect rounding off, etc
Re	Reason
Ro	Rounding

QUESTION 1 [17 MARKS]			
Solution	Explanation	Marks	
1.1.1	$30 \text{ min} + 15 \text{ min} \checkmark = \frac{45 \text{ min}}{60} \checkmark = 0.75 \text{ h} \checkmark$	1A correct Times added. 1C converting to hours 1A correct answer	(3)
1.1.2	$2.5 \text{ cups} = 12 \text{ scones}$ $? = 36 \text{ scones}$  $\frac{2.5 \times 36}{12} = 7.5 \text{ cups} \checkmark$  $1 \text{ cup} = 250 \text{ ml}$ $7.5 \text{ cups} = ?$  $7.5 \times 250 \checkmark = 1875 \text{ ml} \checkmark$	1MA correct number of cups 1C multiplying by 250ml 1A correct answer	(3)
1.1.3	$1 \text{ inch} = 2.54 \text{ cm}$ $1.5 \text{ inch} = ?$  $1.5 \times 2.54 \checkmark = 3.81 \text{ cm} \checkmark$	1C multiplying by 2.54cm 1A answer	(2)
1.1.4	$0.5 \text{ teaspoon} = 12 \text{ scones}$ $? = 48 \text{ scones}$  $\frac{0.5 \times 48}{12} \checkmark = 2 \text{ teaspoons} \checkmark$	1M multiplying by 48 then divide by 12 1A correct answer	(2)
1.2.1	Tuesday: $21:23 - 09:13 \checkmark = 12:10$ $12 \text{ hours and } 10 \text{ minutes} \checkmark$  Wednesday: $23:10 - 10:34 = 12:36$ $12 \text{ hours and } 36 \text{ minutes} \checkmark$	1M subtracting the correct times 1A time for Tuesday 1A time for Wednesday 1J Justification	(5)

	∴ There's only a difference of 26 minutes. ✓ The statement is correct ✓		
1.2.2	24:00 – 20:22 = 03h38 ✓ 03:38 + 09:13 = 12h51 ✓	1M hours for Monday 1M total hours added	(2)
<b>QUESTION 2 [15 MARKS]</b>			
2.1	$r = \frac{10m}{2} = 5m$ ✓ $C = 2 \times \pi \times r$ $C = \frac{2 \times 3.142 \times 5}{2} + 10$ ✓ $= 25.71m$ ✓	1MA dividing by 2 1MA adding 10m 1A simplification	(3)
2.2	$A = \frac{1}{2} \pi r^2$ $= \frac{1}{2} \times 3.142 \times 5^2$ ✓ $= 39.275 m^2$ ✓✓	1SF correct substitution 2A correct answer	(3)
2.3	Area of a hall to be tiled Area = (14 m x 7 m) + (11 m x 18 m) ✓✓ $= 98 m^2 + 198 m^2$ ✓ $= 296 m^2 - 39,275 m^2$ ✓ $= 256,275 m^2$ ✓ <b>OR</b> A = (11m x 4 m) + (18 m x 14 m) ✓✓ $= 44 m^2 + 252 m^2$ ✓✓ $= 256,725 m^2$ ✓ <b>OR</b> A = 18 m x 18 m – 7 m x 4 m – 39,275 m <sup>2</sup> ✓✓ $= 324 m^2 - 28 m^2 - 39,275 m^2$ ✓✓ $= 256,725 m^2$ ✓ ∴ The claim is valid ✓	2M credit the method 2M credit the method 1MA adding the values 1A total area 1MA subtracting the area of stage 1CA answer 1J justification	(9)
<b>QUESTION 3 [9 MARKS]</b>			
3.1	$r = \frac{8.92cm}{2}$ ✓ $= 4.46 cm$ ✓	1MA dividing by 2 1A simplification	(2)
3.2	$V = 3.142 \times r^2 \times h$	2SF correct substitution	(4)

	$1000 \checkmark = 3.142 \times (4.46)^2 \times h \checkmark$ $\frac{1000}{62.4994} = \frac{62.4994 \times h}{62.4994} \checkmark$ $16 \text{ cm} = h \checkmark$	1S simplification 1CA answer	
3.3	$1000 \text{ cm}^3 \times \frac{90}{100}$ $= 900 \text{ cm}^3 \checkmark$ $1000 \text{ cm}^3 - 900 \text{ cm}^3$ $= 100 \text{ cm}^3 \checkmark$  $1000 \text{ cm}^3 = 1 \text{ l}$ $100 \text{ cm}^3 = ?$  $\frac{100}{1000} = 0.1 \text{ l} \checkmark$	1MA multiplying by 90% 1M volume of the empty space 1C converting to litres 1A correct answer	(3)
<b>QUESTION 4 [9 MARKS]</b>			
4.1	C3 ✓✓	2RD reading from the graph	(2)
4.2	North ✓✓	2AO answer only	(2)
4.3	$3.4 \text{ cm} \checkmark : 100 \text{ km}$ $4.1 \text{ cm} \checkmark = ?$  $\frac{4.1 \times 100}{3.4} \checkmark = 120.59 \text{ km} \checkmark$ $100 \text{ km} \checkmark$  OR  $1 : 2\,500\,000$ $4.1 \text{ cm} : ? \checkmark$  $4.1 \times 2\,500\,000 \checkmark$ $\frac{10\,250\,000 \text{ cm}}{100\,000} \checkmark$ $102.5 \text{ km} \checkmark$	1 MA measuring the bar 1MA measuring the distance 1M calculating actual 1CA 1R to the nearest 100  <b>OR</b>  1MA measuring the distance 1M multiplying by the scale factor 1C converting to km 1CA	(5)

	100km✓	1R to the nearest 100	
<b>TOTAL MARKS: 50</b>			

