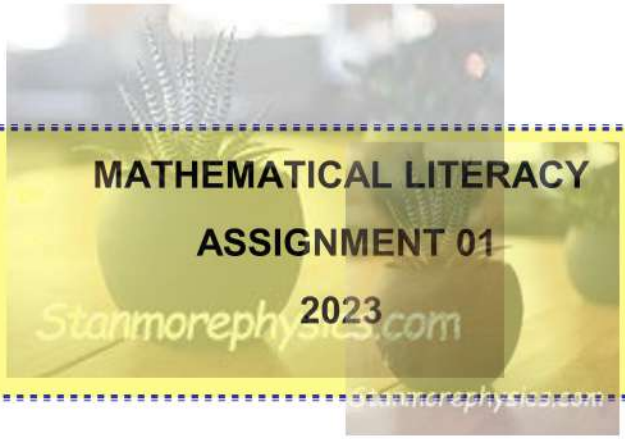
LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF
EDUCATION

VHEMBE WEST DISTRICT

GRADE 12



MATHEMATICAL LITERACY

ASSIGNMENT 01

2023

TOTAL: 50 MARKS

DURATION: 1.5 HOURS

The paper consists of 7 pages, including cover page.

INSTRUCTIONS AND INFORMATION

1. This question paper consists of THREE questions. Answer ALL the questions.
2. Show ALL calculations.
3. Number the answers correctly according to the numbering system used in this question paper.
4. Start EACH question on a NEW page.
5. Round off all final answers appropriately according to the context unless stated otherwise.
6. An approved calculator (non-programmable and non-graphical) may be used, unless stated otherwise
7. Indicate units of measurement where applicable.
8. Maps and diagrams are not necessarily drawn according to scale, unless stated otherwise.
9. Write neatly and legibly.

QUESTION 1

Below is a recipe for baking brown bread.

Ingredients

- 1 package ($\frac{1}{4}$ ounce) active dry yeast
- $2\frac{1}{4}$ cups warm water (110°F to 115°F)
- 3 tablespoons sugar
- 1 tablespoon salt
- 2 tablespoons canola oil
- $6\frac{1}{4}$ to $6\frac{3}{4}$ cups all-purpose flour

Note that you may use the following conversions:

- 1 ounce = 28 grams
- 1 cup = 250ml
- $°C = (°F - 32) \div 1{,}8$

1.1 How many grams of active dry yeast must be used for the bread recipe? (2)

1.2 Calculate the maximum temperature of the water in degree celsius that must be used to make the bread. (3)

1.3 Convert $2\frac{1}{4}$ cups of warm water to millilitres. (2)

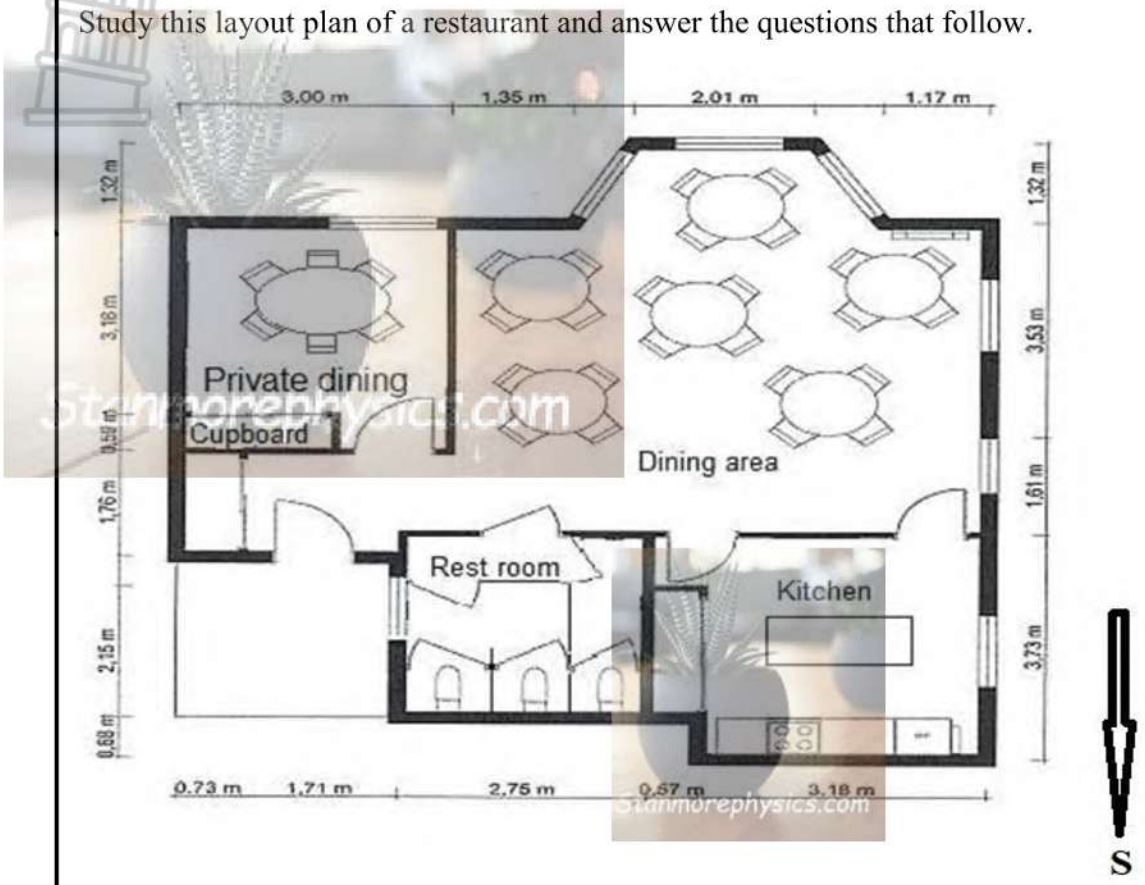
1.4 1 tablespoon= 15 ml, determine the ratio of warm water to canola oil. Give the ratio in simplest form. (2)

[09]

QUESTION 2

2.1 Below is a two-dimensional sketch of a layout plan of a small restaurant.

Study this layout plan of a restaurant and answer the questions that follow.



The southern side of the building has no windows.

All measurements may be used for inner dimensions.

The doors leading to the kitchen have hinges that swings to close the door.

2.1.1 Give a reason why the dining area has so many windows. (2)

2.1.2 Determine a door the waiters will use when serving food from the kitchen to the people in the dining area? Give a reason for your answer (3)

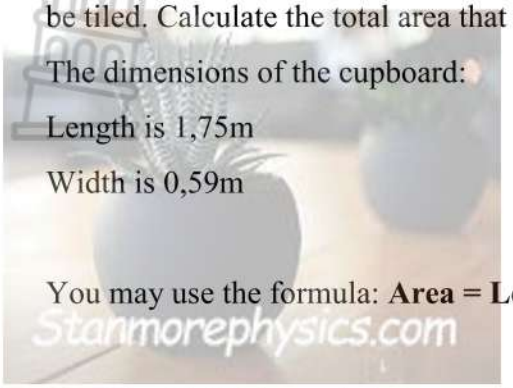
2.2 Write down the probability of randomly picking a room with three windows in this restaurant. (2)

2.3 Mr Mota wants to tile the private dining room. The area under the cupboard will not be tiled. Calculate the total area that needs to be tiled.

The dimensions of the cupboard:

Length is 1,75m

Width is 0,59m



You may use the formula: **Area = Length × Width** (6)

2.4 The tiles Mr Mota wants to buy costs R84,99 per square meter. He needs to buy 10% more tiles in case of any damaged tiles. These tiles are sold in boxes that cover a square meter.

(a) Calculate the cost of the tiles. (4)

(b) Other costs include:

Labour: R60 per square meter

Grout: R50

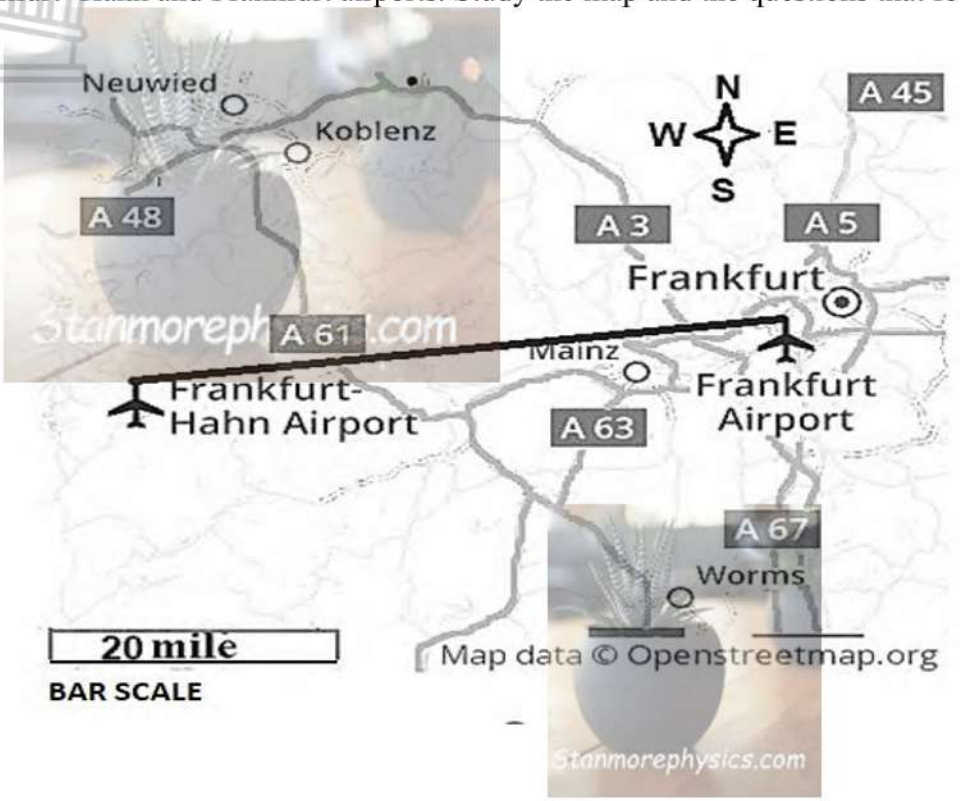
Tile adhesive: R49,90 per bag – 2 bags needed.

Mr Mota states that the total cost for tiling the private dining area will be less than R2 000. Verify, showing all calculations, if his statement correct. (5)

[22]

QUESTION 3

Above is an extract of a map that show the location of two airports in Germany, Frankfurt- Hahn and Frankfurt airports. Study the map and the questions that follow:



3.1 Give the general direction of Neuwied from Mainz? (2)

3.2 Write the scale of the map as unit ratio (1:……) to the nearest million. You may use the following conversion. **1 mile = 1.6 km** (4)

3.3 Calculate the actual distance in miles between the two airports. Give the final answer to three decimal places. (3)

3.4 Give one possible reason why airports in general are located away from residential areas. (2)

3.5 Name the road on the western side you will travel from Worms to Koblenz? (2)

3.6 The travelling distance from Worms to Konlenz is 70 miles. Judith claims that if she leaves Koblenz at 07:20 and travels at an average speed of 40 miles per hour, she will be on time for her interview at 09:15 in Worms. Show, with the necessary calculations, whether her claim is valid or not.

You may use the formula: **Distance = Speed x Time** (6)

[19]

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MATHEMATICAL LITERACY

ASSIGNMENT 01: MEMORANDUM

2023

TOTAL: 50 MARKS

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 [09 Marks]			
Que	**Solution**	**Explanantion**	**Marks**
1.1	$\frac{1}{4} \times 28g$ ✓ $= 7g$ ✓	1M x 28 1MA	(2)
1.2	$(115°F - 32) \div 1.8$ ✓ $83 \div 1.8$ ✓ $= 46.11°C$ ✓	1SF 1S 1A	(3)
1.3	562 : 30 ✓ 18.75 : 1 ✓	1C 1A	(2)
1.4	562.5 ml ✓✓	1A 1S	(2)
QUESTION 2 [22 Marks]			
2.1.1	A lot of tables are to be occupied by a lot of people therefore enough ventilation is needed. ✓✓ **OR** So that there will be enough oxygen as many people will be sharing tables. ✓✓ (Any valid reason)	2Re	(2)
2.1.2	The door on the right hand ✓, as it can be pushed from inside out. ✓✓	1RD 2O	(3)
2.2	$\frac{0}{4} = 0$ ✓✓ Accept **Zero** as an answer	2Re	(2)
2.3	$3.18m \times 3m$ ✓ $9.54m^2$ ✓ $1.75m \times 0.59m$ ✓ $1.0325m^2$ ✓ $\therefore 9.54m^2 - 1.0325m^2$ ✓ $8.5075m^2$ $8.51m^2$ ✓	1RD 1SF 1RD 1SF 1M 1CA	(6)
2.4			
2.4.1	$8.51m^2 \times 1.1 = 9.361m^2$ ✓ Since $1m^2$= 1 box then $9.361m^2$ = 9.361 boxes ✓ = 10 boxes ✓ 10 × R84.99 = R849.90 ✓	1SF 1M 1A 1CA	(4)

2.4.2	Labour: 8.51 × 60 = R510.60 ✓ Grout: R50 Tile adhesive: R49.90 × 2 = R99.80 ✓ Tiles: R849.90 ✓ R510.60 + R50 + R99.80 + R849.90 = R1510.30 ✓ His statement is correct. ✓	1MA multiply by 2 CA	(5)
QUESTION 3 [14 Marks]			
3.1	Northwest / NW ✓✓	2A	(2)
3.2	1 mile = 1.6km 20 miles =? $20 \times 1.6 = 32km$✓ 3.7cm = 32 km **[Accept 3.6 to 3.9]** 3.7cm = 32 × 100 000✓ $\frac{3.7cm}{3.7cm} = \frac{3\,200\,000cm}{3.7cm}$ ✓ 1: 864 864,8649 1: 1 000 000✓	1C 1Re 1S 1RO	(4)
3.3	3.4cm = 20 miles 7.8cm =? $\frac{8.5 \times 20}{3.7}$ ✓ $= 45.95\ miles$✓ **[Accept 46]**	1SF 1A	(2)
3.4	Explosion of the airplane might damage residential areas wherein lives can be endangered. ✓✓ **OR** To clear the noise when the plane is close to the earth ✓✓ **OR** To clear the noise airplanes make when taking off or landing ✓✓	2O	(2)
3.5	A61	2RD	(2)
3.6	$Distance = speed \times time$ $time = \frac{70miles}{40miles/h}$ ✓ $time = 1.75hrs$✓✓ **OR** 1h 45 minutes From 7:20 to 9:15✓ 1hour and 55 minutes✓ Yes, her claim is valid as she wound have to spare10 minutes more to reach her destination. ✓	1SF 2A 1Reading from text 1C 1O	(6)
	TOTAL MARKS: 50		