LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF
EDUCATION

MOPANI WEST DISTRICT

MATHEMATICAL LITERACY

GRADE 11

TERM 1 COMMON TEST

11 MARCH 2024

MARKS : 100

TIME :2 HRS

This question paper consists of 12 pages

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. Start EACH question on a New page.

4. You may use an approved calculator (non-programmable and non-graphical), unless stated otherwise.

5. Show ALL calculations clearly.

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

7. Indicate units of measurement, where applicable.

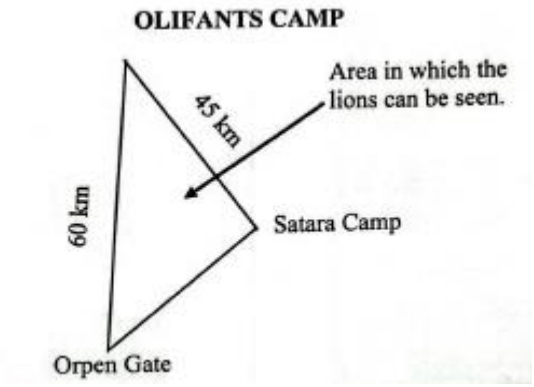
8. Maps and diagrams are NOT necessarily drawn to scale, unless stated otherwise.

9. Write neatly and legibly.

QUESTION 1

1.1

In the Kruger National Park, lions can be seen in an area from the Orpen Gate, to the Satars Camp and the Olifants Camp. The direct distance between Olifants Camp and Satars Camp is 45 km, and the direct distance between the Olifants Camp and the Orpen Gate is 60 km. The total perimeter of the area is 144,69 km.



Use the information above to answer the questions that follow.

1.1.1 Define the term perimeter in the above context. (2)

1.1.2 Calculate the direct distance between Satara Camp and the Orpen Gate. (2)

1.1.3 Write in simplified ratio form, 60 km to 45 km. (2)

1.1.4 Convert 144,69 km to mm. (2)

1.1.5 Write down ONLY the letter (A-C) next to question number (1.1.5) of the correct formula to calculate the size of the area where lions can be seen.

A Area = length × width
B Area = $\pi \times (\text{radius})^2$
C Area $= \frac{1}{2} \times$ base × height (2)

1.2 Mokgadi saw that Omo auto washing powder detergent is on promotion at two shops.

PROMOTION SHOP A 3 KG WASHING POWDER	PROMOTION SHOP B 2KG WASHING POWDER
	

[Source: www.clicks.com]

NOTE:

- Promotion available from 28 February 2023 to 30 April 2023.
- 3 kg washing powder will wash 30 loads in a washing machine.

Use the information above to answer the questions that follow.

1.2.1 Determine the total number of days this promotion is available. (2)

1.2.2 (a) Calculate the cost per load for the 3 kg washing powder. (2)

(b) Write down the price per kg for the 2 kg bag. (2)

1.2.3 Determine how many loads can be washed with 4 kg washing powder if it is in the same ratio as the 3 kg bag. (2)

1.2.4 Mokgadi has $\frac{3}{4}$ of a 2 kg bag left at home. Write down how many grams left in the bag. (3)

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QUESTION 2

2.1

Mosike is a physiotherapist. She was contacted by SARU (the South African Rugby Union) to give the 7s rugby players a massage during the rugby tournament that was held in Cape Town during December 2022. Mosike hires 13 *masseuses to perform this duty.

Number of sessions per day	1	2	3	4	5	8	10
Number of masseuses	13	26	39	52	65	**A**	130
Income in Rand	1 755	3 510	**B**	7 020	8775	14040	17 550

*Masseuse: A person who provides a professional massage.

Study the table above and answer the questions that follow.

2.1.1 Show, by means of calculations, that the income for a single massage is R135. (2)

2.1.2 Calculate the values of **A** and **B**. (4)

2.1.3 Complete the following formula to calculate the total income per session.

Income = … × … (2)

2.1.4 Prove that the total income for the weekend, if they start working on Friday and finish on Sunday, is R78 975. There are 15 sessions per day. (6)

2.1.5 Mosike pays each masseuse R1 000 for the weekend and R50 per massage. She needs to rent a room at the Cape Town stadium to perform these massages, which costs R4 800 per day. Calculate her total expenses and express the total income to total expenses as a ratio in unit form. (6)

2.2 HRM Domestic is a company that helps domestic workers to find jobs. They ensure that domestic workers are not underpaid for the work they do. Income is based on hourly, weekly and monthly rates. Workers work 45 hours per week and 195 hours per month.

Minimum income rates (in Rand)		
	January – December 2021	**January – December 2022**
Hourly	19,09	**C**
Weekly	859,05	1 043,55
Monthly	3 722,55	4 522,05

Study the table above and answer the questions that follow.

2.2.1 Determine the value of **C**, the minimum hourly rate for 2022. (2)

2.2.2 Determine the percentage increase in monthly income, rounded-off to one decimal place. Use the following formula:

$$\textbf{Percentage increase} = \frac{\textit{New income} - \textit{Old income}}{\textit{Old income}} \times \mathbf{100}$$ (3)

2.2.3 Steffi asked if she could work overtime to earn extra money. The person she works for agreed that she could work on Saturdays for R200 per day for only 5 hours. Determine her hourly wage for that day and state whether she was paid the correct minimum wage per hour for the 2022 year. (3)

2.3 Mr Navidad works for Letspack. He is a salesman who travels widely to advertise the products that Letspack sells. He drives a 2018 Ford Ranger bakkie that has a current value of R259 900. He travels 1 500 km on average per month. Travel allowance can only be claimed the following month after the number of kilometres travelled have been submitted for claims. His monthly travel allowance consists of a predetermined amount for the current value of the vehicle as well as fuel and maintenance costs.

Current value of the vehicle	Fixed Travelling Claim (R/Annum)	Fuel Claim (c/km)	Maintanance claim (c/km)
Does not exceed R95 000	29 836	131,7	40,9
Exceeds R95 000, but does not exceed R190 000	52 889	147,0	51,1
Exceeds R190 000, but does not exceed R285 000	76 033	159,7	56,3
Exceeds R285 000, but does not exceed R380 000	96 197	171,8	61,5
Exceeds R380 000, but does not exceed R475 000	116 438	183,8	72,3
Exceeds R475 000, but does not exceed R570 000	137 735	210,8	**D**
Exceeds R665 000	159 031	218,0	105,5

Study the table above and answer the questions that follow.

2.3.1 Calculate Mr Navidad's monthly fixed travelling claim. (3)

2.3.2 Mr Navidad is thinking of buying a newer model vehicle that has a value of R480 000. Calculate the missing value (**D**),that will represent Mr Navidad's monthly maintenance cost if he decides to buy this vehicle. The amount for his maintenance claim is R1 329. (4)

2.3.3 Mr Navidad decides not to buy the newer vehicle. He states that he could claim back R8 825 after tax is deducted for his monthly travel allowance. He will be taxed at 25% of the actual amount that he can claim.
Show by means of calculations whether his statement is valid.
You may use the following formula:

Claim = Monthly fixed travelling claim + (km driven × fuel claim) + (km driven × maintenance claim) (6)

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QUESTION 3

3.1

Pentagon Computer College wants to upgrade its CCTV (Closed Circuit Television) in its premises. Given below is one of the quotations for the installation from Northern Security.

TABLE 1: QUOTATION FROM NORTHERN SECURITY

Account	Your Reference	Tax Exempt	Tax Reference	Sales Code	Expiry Date
MCC006	UPGRADE CCTV	N			16/01/2023

Code	Description	Quantity	Unit Price (R)	Tax (R)	Net Price (R)
C006	Hik analogue 1080p bullet	16	...	1 440,00	11 040,00
C40	16 ch Acusense Hik DVR	1	6 386,00	832,96	6 386,00
C032	4tb SV Rated SATH HDD	1	1 899,00	247,70	1 899,00
134	9 way PSU with 7 ah battery	5	1 420,00	926,09	7 100,00
I008	Cabling and sundries 500m	1	3 990,00	520,43	3 990,00
C061	Baluns	32	45,39	189,45	1 452,48
C009	Labour	16	300,00	626,09	4 800,00
C070	Camera mounting box	24	65,57	205,26	1 573,68
F004	Conduiting 16mm x 25mm	1	37 690,00	4 916,09	37 690,00

50% deposit is required on confirmation of quote. Balance due on invoice. Received in good order.	Sub Total	66 027,09
	Discount @ 0,00%	0,00
	Amount Excl. 15% Tax	66 027,09
	Tax	9 904,06
Signed: _____ Date: _____	TOTAL	**75 931,15**

[Adapted from 2023 KZN Trial Q1 1.2]

Use TABLE 1 to answer the questions that follow.

3.1.1 Explain what is meant by *quotation* in the given context. (2)

3.1.2 Calculate the unit price for Hik analogue 1080p bullet. (2)

3.1.3 Write down, to the nearest ten cents, the total cost of the quotation. (2)

3.1.4 If Pentagon Computer College decides to accept the quotation above, calculate the deposit the college will have to pay. (2)

3.1.5 Calculate the cost per metre for cabling and sundries. (2)

3.2 Below is a recipe that Dorah will use to make rusks for tea at a birthday party.

Ingredients	Buttermilk rusks
• 1,5 kg self-raising flour • 3 ml salt • 10 ml cream of tartar • 500 g butter • 350 g sugar • 500 ml buttermilk This recipe makes 25 rusks	
NOTE: Preparation time = 45 minutes Bake for 35 minutes at 180°C **tsp = 5 ml and 1 cup = 250 ml**	

Use the information above to answer questions that follow.

3.2.1 Write down the amount of self- raising flour in grams, needed for the recipe. (2)

3.2.2 How many teaspoons of cream of tartar is needed to make 75 rusks? (2)

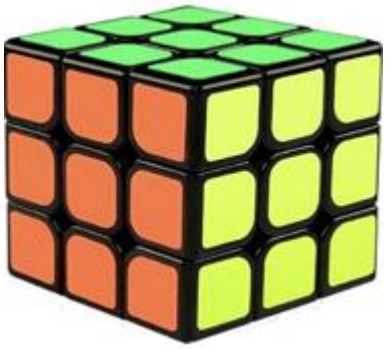
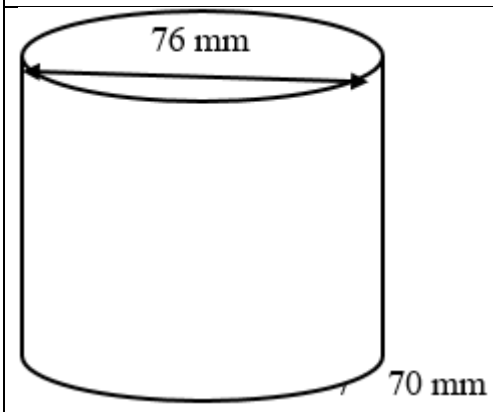
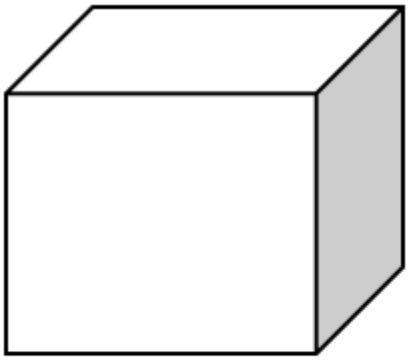
3.2.3 Convert the temperature of the baking of rusks to degrees Fahrenheit (°F) (3)
Use the Formula $°F = (1.8 \times °C) + 32$

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QUESTION 4

4.1

Magic cubes were popular 3D puzzle toys in the 1980's.

CYLINDRICAL MAGICAL CUBE	**CUBIC MAGIC CUBE**
	
DIMENSIONS OF A CYLINDRICAL MAGIC CUBE	**DIMESIONS A CUBE MAGIC CUBE**
	 Side = 55 mm

Use the information above to answer the questions that follow.

4.1.1 Calculate the radius of the cylindrical magic cube. (2)

4.1.2 Calculate in cm^3, the volume of the cylindrical magic cube.

You may use the formula:

Volume of cylinder = $3,142 \times$ radius $\times$ radius $\times$ height. (3)

4.1.3 Determine the number of square sides of a cube. (2)

4.1.4 a) Define *total surface area* in this context. (2)

b) Calculate in mm^2, the total surface area of the magic cube.

You may use the formula: **Area of a square = side × side** (3)

4.2

A 375 kVa electricity generator of 375kVa with an output of 300 kW is used as a backup during an electricity outage (i.e. load shedding).

NOTE: kVa = Kilovolt-amps.
kW = Kilowatts.
1kW = 1 000 watts.

Use the information above to answer the questions that follow.

4.2.1 Convert the 300kW to watts. (2)

4.2.2 Determine the ratio of kW to kVa in a simplified form. (2)

4.2.3 Sam started the generator on Tuesday at the time shown on the watch below



[Source:amazon.com]

(a) Identify the time format shown on the watch. (2)
(b) Determine the day and time of switching the generator off if it ran for 2 hours 15 minutes. (3)

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TOTAL: 100