



education

Department:
Education
North West Provincial Government
REPUBLIC OF SOUTH AFRICA

PROVINCIAL ASSESSMENT

GRADE 10

MATHEMATICAL LITERACY P2
NOVEMBER 2024

MARKS: 75

TIME: 1 ½ hour



This question paper consists of 7 pages.

INSTRUCTIONS AND INFORMATION

1. This question paper consists of FOUR questions. Answer ALL the questions.
2. Start EACH question on a NEW page.
3. Leave a line after each sub question.
4. Number the answers correctly according to the numbering system used in this question paper.
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.



QUESTION 1

1.1 TABLE 1 below shows a list of concepts and units/symbols thereof.

TABLE 1: CONCEPTS AND UNITS/SYMBOLS

Column A	Column B
1.1.1 Capacity	A °C
1.1.2 Area	B millimetres
1.1.3 Height	C millilitres
1.1.4 Temperature	D m ²
	E kg

Use TABLE 1 above to choose the unit/symbol from COLUMN B that matches the concept in COLUMN A. Write only the letter (A–E) next to the question numbers (1.1.1 to 1.1.4), e.g. 1.1.5 F.

(8)

1.2 Dan wants to watch a movie. The movie starts at 21:00 and is **1 hour 45 minutes** long.

1.2.1 Write 21:00 in a 12 hour format.

(2)

1.2.2 What time will the movie end?

(2)

1.3 Connie weighs 94 kg and is concerned about her weight. She has joined a gym and wants to lose some weight. Convert her weight to grams.

(2)

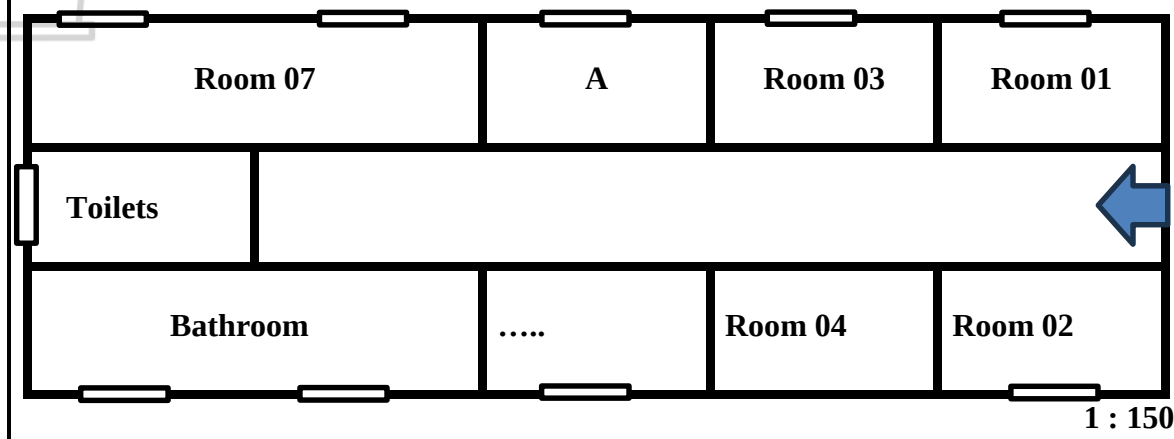
[14]



QUESTION 2

- 2.1 Morare secondary is a boarding school. The school hostel has 12 identical blocks labelled A to L. Each room has 3 beds except room 07 which has 4 beds.

Below is a layout Block A of Morare secondary school hostel.



Refer to the layout above to answer the questions that follow.

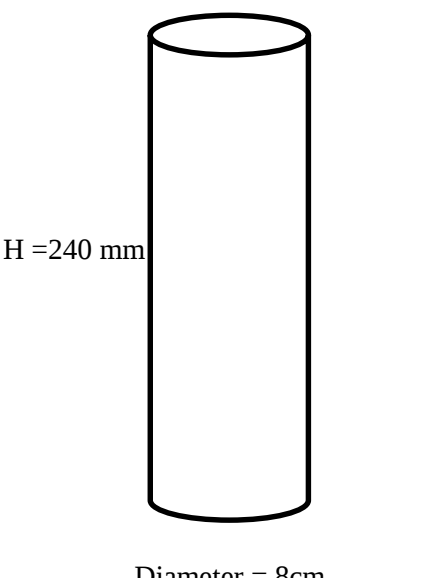
- 2.1.1 Write down the number of the room labelled **A**. (2)
- 2.1.2 Kitso is staying at **B07**. Explain what **B07** mean in this context. (2)
- 2.1.3 Write a set of directions to walk from room 04 to room 07. (3)
- 2.1.4 The hostel matron states that the total number of learners in the hostel if ALL the rooms are fully occupied is 192.
Verify, showing ALL calculations whether her statement is CORRECT. (4)
- 2.1.5 Explain the meaning of the scale 1 : 150. (2)
- 2.1.6 The actual width of bedroom 07 is 3,6 m. Use the given scale to calculate the bedroom width on the layout in mm. (4)
- 2.2 The hostel caretaker found a library card at the hostel gate.
What is the probability as a percentage, that it belongs to a learner in Block A?
Round off your answer to the nearest percentage. (4)

[21]

QUESTION 3

Connie found a healthy smoothie recipe on the internet. She must blend a medium sized banana, apple, a handful blueberries and $1\frac{2}{3}$ cup of milk. The mixture yields 550 ml of smoothie.

Below is a bottle she uses to drink her smoothie.

Picture of a bottle	Diagram (without the lid)
	

1 cup = 200 ml

1 000 ml = 1 000 cm³

Use the information above to answer the questions that follow.

3.1 Determine the amount of milk needed in ml, if 1 cup = 200 ml. (2)

3.2 Determine the number of bananas needed to make 1 500 ml of smoothie. (3)

3.3 Convert 240 mm to cm. (2)

3.4 Hence determine the volume of this bottle in cm³.

You may use the formula:

$$v = \pi r^2 h, \text{ where } \pi = 3,142. \quad (4)$$

3.5 Connie claims that one bottle is big enough to hold TWICE the mixture.

Verify, showing ALL calculations whether her claim is VALID. (5)

3.6 The material used to make this bottle costs R0,20/ cm².

Determine the cost of making 1 water bottle.

You may use the formula:

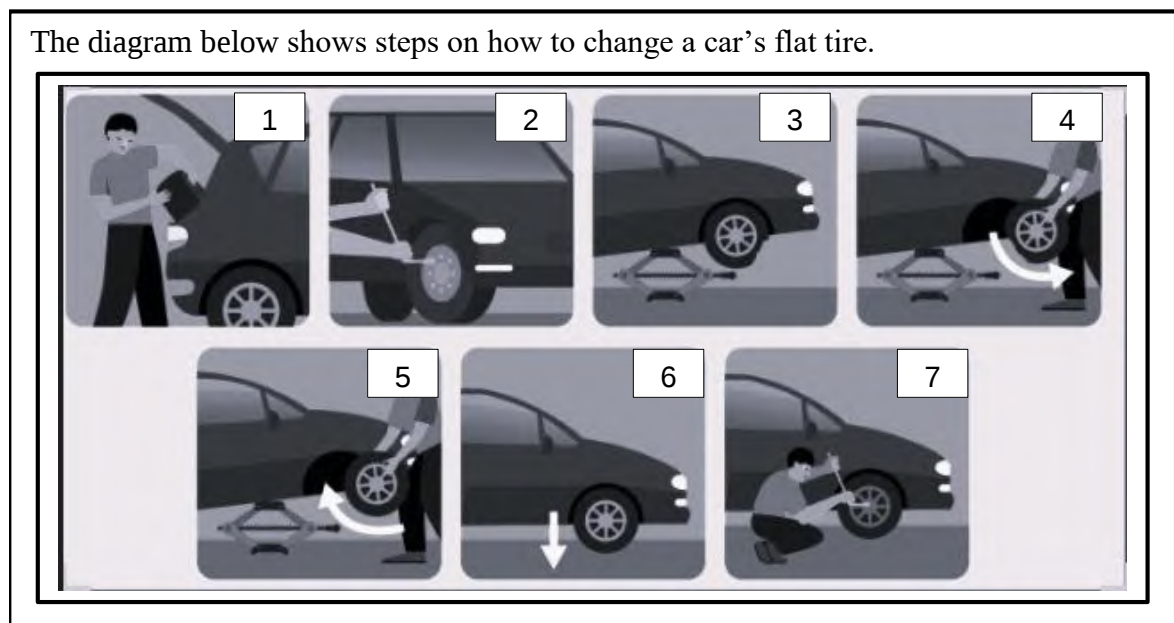
$$SA = \pi \times r(r + 2 \times h), \text{ where } \pi = 3,142.$$

(5)
[21]

QUESTION 4

4.1

The diagram below shows steps on how to change a car's flat tire.



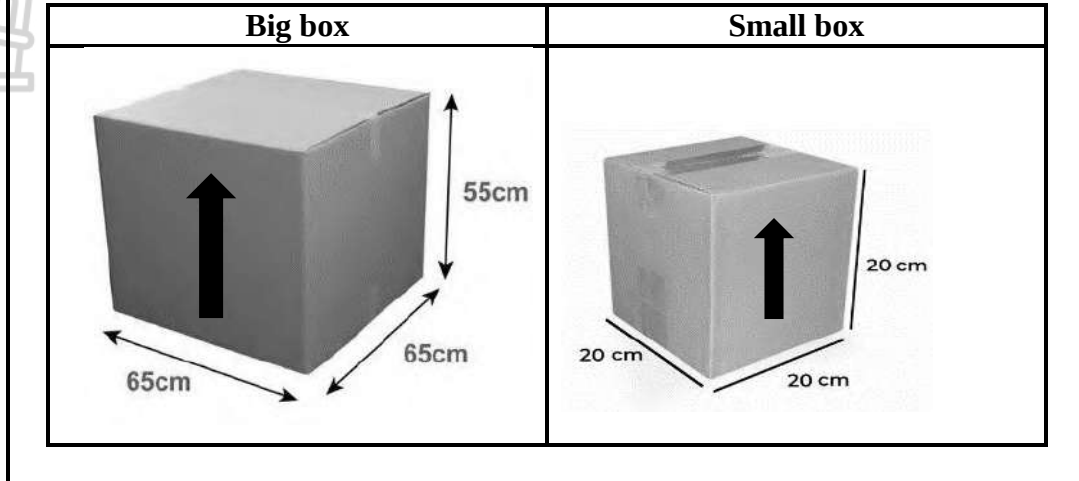
Use the diagram above and answer the questions that follow.

- 4.1.1 Name the tool needed to lift the car. (2)
- 4.1.2 Write step by step instruction from STEP 2 to STEP 5. (4)
- 4.1.3 Which step indicates that the car must be lowered down? (2)
- 4.1.4 It is recommended that the process of changing a tire must be performed on a flat surface. Give a reason for this recommendation. (2)

4.2

Connie makes glass bowls and sell them local stores. She packs ONE bowl in a small box with the dimensions $(20\text{ cm} \times 20\text{ cm} \times 20\text{ cm})$. During distribution to local stores, she packs the small boxes in a bigger one $(65\text{ cm} \times 65\text{ cm} \times 55\text{ cm})$.

The diagram below shows the dimensions of each box.



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

4.2.1 Give a reason why there are arrows on these boxes. (2)

4.2.2 Connie claims that she can pack more than 18 small boxes in a big one.

Verify, showing ALL calculations, whether her claim is VALID. (7)
[19]

TOTAL 75



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MATHEMATICAL LITERACY P2 NOVEMBER 2024 MARKING GUIDELINES

MARKS: 75

Symbol	Explanation
M	Method
MA	Method with accuracy
MCA	Method with consistent accuracy
CA	Consistent accuracy
A	Accuracy
C	Conversion
S	Simplification
RT	Reading from a table/a graph/document/diagram
SF	Correct substitution in a formula
O	Opinion/Explanation/Reasoning
P	Penalty, e.g. for no units, incorrect rounding off, etc.
R	Rounding off
NPR	No penalty for correct rounding
AO	Answer only

These marking guidelines consist of 5 pages.

NOTE:

- If a candidate answers a question TWICE, only mark the FIRST attempt.
- If a candidate has crossed out (cancelled) an attempt to a question and NOT redone the solution, mark the crossed out (cancelled) version.
- Consistent accuracy (CA) applies in ALL aspects of the marking guidelines; however, it stops at the second calculation error.
- NOTE: consistent accuracy (CA) does not apply in cases of a breakdown.
- If the candidate presents any extra solution when reading from a graph, table, layout plan and map, then penalize for every extra item presented.
- As a general marking principle, if a candidate has incurred one mistake and there is evidence of sound mathematics thereafter, then that candidate should lose one mark only.
- Rounding is an independent mark.
- In opinion type questions marks will only be awarded if relevant calculations are shown.

QUESTION 1 [14 MARKS] Answer only AO – full marks			
Q	Solution	Explanation	T/L
1.1.1	C✓✓	2A answer (2)	M L1
1.1.2	D✓✓	2A answer (2)	M L1
1.1.3	B✓✓	2A answer (2)	M L1
1.1.4	A ✓✓	2A answer (2)	M L1
1.2.1	09:00✓ pm✓	1A 09:00 1A pm (2)	M L1
1.2.2	21:00 + 1 hour 45 minutes ✓ = 22:45✓	1M adding 1A answer (2)	M L1
1.3	✓M 94 kg × 1 000 = 94 000 g ✓A	1M multiplying by 1 000 1A simplification (2)	M L1
		[14]	

QUESTION 2 [21 MARKS]			
Q	Solution	Explanation	T/L
2.1.1	Room 05✓✓A	2A answer (2)	MP L1
2.1.2	✓A Kitso is staying in block B room 7.✓A	1A block B 1A room 7 (2)	MP L1
2.1.3	From room 4, turn left✓A Walk to the end of the passage✓A Enter the room on the right hand side.✓A	1A from room 4 1A to the end 1A righthand side (3)	MP L3
2.1.4	Total number = $(6 \times 3) + 4$ ✓M = 22 people✓S ∴ 22×12 blocks ✓A = 264 ✓CA	1M method of addition and multiplication 1S simplification 1A multiplying by 12 1CA (4)	MP L2
2.1.5	A 1 unit on the layout represent 150 units in real life.✓✓	2A explanation (2)	MP L1
2.1.6	✓MA $3,6 \text{ m} \div 150 = 0,024 \text{ m}$ ✓A Layout length = $0,024 \times 1\,000$ ✓M = 24 mm✓CA OR ✓MA $3,6 \text{ m} \div 150 = 0,024 \text{ m}$ ✓A Layout length = $0,024 \times 100$ ✓M = 24 cm✓CA	1MA dividing 3,6 m by 150 1A answer 1M multiplying 1CA answer in mm 1MA dividing 3,6 m by 150 1A answer 1M multiplying 1CA answer in cm (4)	MP L3
2.2	$P = \frac{24}{192}$ ✓A $\times 100$ ✓M = 12,5%✓CA ≈ 13 ✓R	1A correct fraction 1M multiplying by 100 1CA 1R correct rounding (4)	MP L2
		[21]	

QUESTION 3 [21 MARKS]			
Q	Solution	Explanation	T/L
3.1	$1\frac{2}{3} \times 200 \text{ ml} \checkmark \text{M}$ $= 333,3333333 \text{ ml} \checkmark \text{A}$	1M method 1A answer (2)	M L1
3.2	No. of cups = $\frac{1\,500 \text{ ml}}{550 \text{ ml}} \times 1 \text{ banana} \checkmark \text{M}$ $= 2,727272727 \text{ bananas} \checkmark \text{CA}$ $\approx 3 \text{ bananas} \checkmark \text{R}$	1M dividing 1CA 1R rounding (3)	M L2
3.3	$\checkmark \text{MA}$ $(240 \div 10) \text{ cm} = 24 \text{ cm} \checkmark \text{A}$	1MA 1A (2)	M L2
3.4	$r = 8 \text{ cm} \div 2$ $= 4 \text{ cm} \checkmark \text{A}$ $V = 3,142 \times (4 \text{ cm})^2 \times 24 \text{ cm} \checkmark \text{SF}$ $= 1\,206,528 \checkmark \text{CA cm}^3 \checkmark \text{A}$	1A radius 1 SF substitution 1CA simplification 1A unit (4)	F L3
3.5	$1\,000 \text{ cm}^3 = 1\,000 \text{ ml}$ $\frac{1\,206,528}{1\,000} \times 1\,000 \text{ ml} \checkmark \text{C}$ $= 1206,528 \text{ ml} \checkmark \text{CA}$ $\text{No.} = 1206,528 \text{ ml} \div 550 \text{ ml} \checkmark \text{MA}$ $= 2,193687273 \checkmark \text{S}$ Claim is valid $\checkmark \text{O}$ OR $550 \text{ ml} \times 2 \checkmark$ $= 1\,100 \text{ ml} \checkmark$ $1\,206,528 \text{ cm}^3 = 1\,206,528 \text{ ml} \checkmark \text{C}$ $\therefore 1\,206,528 \text{ ml}$ is more than $1\,100 \text{ ml} \checkmark$ Twice the mixture will fit in one bottle. Claim is valid $\checkmark \text{O}$	CA from 3.1.4 1C conversion. 1CA simplification 1MA division 1S simplification 1O opinion 1MA multiplication by 2 1CA simplification 1C conversion. 1 O opinion 1O opinion (5)	M L4
3.6	$\text{SA} = 3,142 \times 4 \text{ cm}(4 \text{ cm} + 2 \times 24 \text{ cm}) \checkmark \text{SF}$ $= 653,536 \text{ cm}^3 \checkmark \text{A}$ $\text{Cost} = \text{R}0,20/\text{cm}^3 \times 653,536 \text{ cm}^3 \checkmark \text{MCA}$ $= \text{R}130,7072 \checkmark \text{CA}$ $= \text{R}130,71 \checkmark \text{R}$	1 SF substitution 1A simplification 1MCA multiplication 1CA simplification 1R correct rounding (5)	M L3
		[21]	

QUESTION 4 [19 MARKS]			
Q	Solutions	Explanation	T/L
4.1.1	Jack ✓✓A	2A answer (2)	MP L1
4.1.2	Step 2: Unscrew the nut using the spanner ✓A Step 3: Lift the car up with a jack ✓A Step 4 :Remove the flat tire ✓A Step 5: Put on the spare wheel. ✓A	1A using the spanner 1A lift the car up 1A remove the flat tire 1A put on (4)	MP L3
4.1.3	Step 6 ✓✓A	2A correct step (2)	M L2
4.1.4	The car may roll over if the surface is not flat. ✓✓A	2A reason (2)	M L4
4.2.1	They give indication on how to handle the box. ✓✓A OR They show which side must face upwards. ✓✓A	2A reason (2)	M L4
4.2.2	No along the length = $65 \text{ cm} \div 20 \text{ cm}$ ✓MA = 3,25 ≈ 3 ✓R No along the width = $65 \text{ cm} \div 20 \text{ cm}$ = 3,25 ≈ 3 ✓R No. along the height = $55 \text{ cm} \div 20 \text{ cm}$ = 2,75 ≈ 2 ✓R Total no. = $3 \times 3 \times 2$ ✓MCA = 18 ✓CA Her claim is invalid. ✓	1MA dividing correct values 1R correct rounding 1R correct rounding 1R correct rounding 1MCA multiplication 1CA answer 1O (7)	M L4
		[19]	
		TOTAL: 75	