SMARTWIZ

GRADE 10 MATHEMATICAL LITERACY EXAM

MARKS: 100

MARKS	

TIME: 2 hours

SCHOOL _____

CLASS (e.g. 4A) _____

SURNAME _____

NAME _____

Instructions for Learners:

- Read all the instructions carefully before you begin the exam.
- Write your name and learner number clearly on the answer sheet/booklet.
- Answer all the questions unless otherwise instructed.
- Show all your work/calculations where applicable.
- Write neatly and legibly.
- Use only blue or black ink. *Do not use correction fluid or tape.*
- No electronic devices (calculators, phones, etc.) are allowed unless explicitly permitted.
- Raise your hand if you have any questions.
- Do not talk to other learners during the exam.
- Any form of cheating will lead to disqualification.

This test consists of 5 pages including the cover page.

SECTION A: BASIC APPLICATION & FINANCE (30 MARKS)

QUESTION 1: BANK STATEMENTS (10 marks)

Study the bank statement below and answer the questions:

Date	Description	Debit	Credit	Balance
01 May	Opening Balance			R3 450
03 May	ATM Withdrawal	R500		R2 950
05 May	Salary Deposit		R2 800	R5 750
09 May	Electricity Payment	R1 200		R4 550
11 May	Grocery Store Purchase	R700		R3 850
15 May	Airtime Purchase	R150		R3 700

1.1 What was the **salary amount** deposited on 5 May? (1)

1.2 What was the **closing balance** on 15 May? (1)

1.3 How much money was spent in total between 1 and 15 May? (3)

1.4 Calculate the **average daily spending** from 3 May to 15 May (only debit entries). (3)

1.5 Which transaction had the **highest amount debited**? (1)

1.6 What is the total number of transactions (excluding balance entries)? (1)

QUESTION 2: TEMPERATURE & CONVERSIONS (10 marks)

2.1 Convert 25°C to Fahrenheit.
Formula: F = (9/5 × C) + 32
_____ (2)

2.2 A thermometer reads 95°F. Convert it to Celsius.
Formula: C = (F – 32) × 5/9
_____ (2)

2.3 A city recorded temperatures of 18°C, 21°C, 16°C, 23°C, and 20°C in a week.
Calculate the **mean temperature**. (2)

2.4 What is the **range** of the temperatures recorded? (2)

2.5 Give one reason why temperature data is important in real-life situations. (2)

QUESTION 3: BUDGETING (10 marks)

Lebo earns R6 500 per month. Her monthly expenses are:

- Rent: R2 500
- Transport: R800
- Food: R1 200
- Cellphone: R350
- Entertainment: R400

3.1 Calculate Lebo's **total monthly expenses**. (2)

3.2 How much money does she **have left** after expenses? (2)

3.3 What **percentage** of her income is spent on rent? (2)

3.4 Suggest **two ways** Lebo could reduce her expenses. (2)

3.5 If she wants to save 15% of her income, how much should she save? (2)

SECTION B: MEASUREMENT & SCALE (30 MARKS)

QUESTION 4: SCALE DRAWING (15 marks)

A rectangular room is drawn on a plan using a scale of 1:100.
The drawing shows the length of the room as 7.2 cm and the width as 4.5 cm.

4.1 What is the **actual length and width** of the room in metres? (4)

4.2 Calculate the **area of the room** in square metres. (3)

4.3 If the cost of tiling is R185 per m², calculate the total **cost to tile the room**. (4)

4.4 Give one reason why a scale is used in floor plans. (2)

4.5 What does a scale of 1:100 mean? (2)

QUESTION 5: MEASUREMENT & DIAGRAMS (15 marks)

A cylindrical water tank has a radius of 1.2 m and a height of 2.5 m.

5.1 Use the formula $\mathbf{V = \pi r^2 h}$ to calculate the volume of the tank. (Use $\pi = 3.14$) (3)

5.2 How many litres can the tank hold? (1 m³ = 1 000 litres) (2)

5.3 If a household uses 200 litres of water per day, how many days will the tank last? (3)

5.4 The tank is only filled to 80% capacity. How many litres is that? (3)

5.5 Suggest **one way** to conserve water in a household. (2)

SECTION C: DATA & STATISTICS (40 MARKS)

QUESTION 6: ANALYSING DATA (20 marks)

The marks out of 10 for a maths quiz are:
2, 5, 6, 6, 7, 8, 6, 5, 7, 9, 3, 6, 8, 4, 5

6.1 Arrange the data in ascending order. (2)

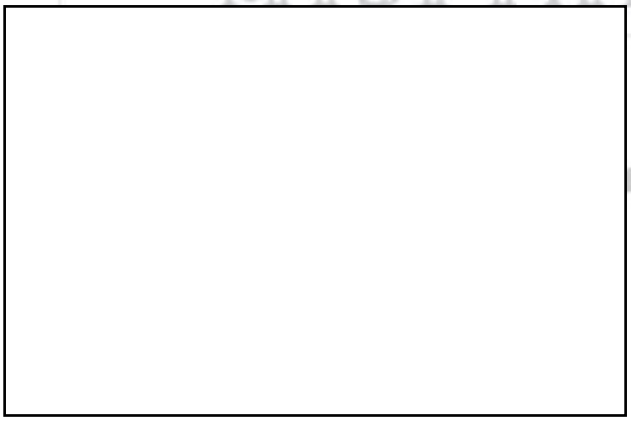
6.2 Determine the:

- Mode (1) _____
- Median (2)
- Mean (2)
- Range (2)

6.3 How many learners scored 6 or more? (2)

6.4 What percentage of learners scored below 5? (3)

6.5 Draw a frequency table for the data. (4)



6.6 Based on the results, suggest one way the teacher could improve performance. (2)

TOTAL : 100

MEMO

SECTION A: BASIC APPLICATION & FINANCE (30 MARKS)

QUESTION 1: BANK STATEMENTS (10 marks)

1.1 **R2 800 ✓** (1)
1.2 **R3 700 ✓** (1)
1.3 R500 + R1 200 + R700 + R150 = **R2 550 ✓✓✓** (3)
1.4 R2 550 ÷ 4 = **R637.50 per transaction (on average) ✓✓✓** (3)
1.5 **Electricity Payment – R1 200 ✓** (1)
1.6 **5 transactions ✓** (1)

QUESTION 2: TEMPERATURE & CONVERSIONS (10 marks)

2.1 F = (9/5 × 25) + 32 = 45 + 32 = **77°F ✓✓** (2)
2.2 C = (95 – 32) × 5/9 = 63 × 5/9 = **35°C ✓✓** (2)
2.3 Mean = (18 + 21 + 16 + 23 + 20) ÷ 5 = 98 ÷ 5 = **19.6°C ✓✓** (2)
2.4 Range = 23 – 16 = **7°C ✓✓** (2)
2.5 Any suitable reason:

- Helps plan clothing
- Helps farmers
- Weather forecasting ✓✓ (2)

QUESTION 3: BUDGETING (10 marks)

3.1 R2500 + R800 + R1200 + R350 + R400 = **R5 250 ✓✓** (2)
3.2 R6500 – R5250 = **R1 250 left ✓✓** (2)
3.3 (2500 ÷ 6500) × 100 = **38.46% ✓✓** (2)
3.4 Any valid two suggestions:

- Reduce entertainment
- Use public transport
- Switch to cheaper cellphone plan ✓✓ (2)

3.5 15% of 6500 = 0.15 × 6500 = **R975 ✓✓** (2)

SECTION B: MEASUREMENT & SCALE (30 MARKS)

QUESTION 4: SCALE DRAWING (15 marks)

4.1 Length = 7.2 × 100 = 720 cm = **7.2 m**
Width = 4.5 × 100 = 450 cm = **4.5 m ✓✓✓✓** (4)
4.2 Area = 7.2 × 4.5 = **32.4 m² ✓✓✓** (3)
4.3 Cost = 32.4 × 185 = **R5 994 ✓✓✓✓** (4)
4.4 To fit large spaces on paper; easier to visualise ✓✓ (2)
4.5 1 cm on plan = 100 cm in real life ✓✓ (2)

QUESTION 5: MEASUREMENT & DIAGRAMS (15 marks)

5.1 $V = \pi r^2 h = 3.14 \times (1.2)^2 \times 2.5 = 3.14 \times 1.44 \times 2.5 =$
$= 3.14 \times 3.6 =$ **11.30 m³ ✓✓✓** (3)
5.2 11.30 m³ = **11 300 litres ✓✓** (2)
5.3 11 300 ÷ 200 = **56.5 days ✓✓✓** (3)
5.4 80% of 11 300 = 0.8 × 11 300 = **9 040 litres ✓✓✓** (3)
5.5 Any valid answer:

- Use greywater
- Fix leaks
- Use water-saving taps ✓✓ (2)

SECTION C: DATA & STATISTICS (40 MARKS)

QUESTION 6: ANALYSING DATA (20 marks)

Data: 2, 5, 6, 6, 7, 8, 6, 5, 7, 9, 3, 6, 8, 4, 5
Sorted: 2, 3, 4, 5, 5, 5, 6, 6, 6, 6, 7, 7, 8, 8, 9 ✓✓ (2)

6.2

- Mode: **6 ✓**
- Median: Middle value = 6 ✓✓
- Mean: (2+3+4+5+5+5+6+6+6+6+7+7+8+8+9) = 93 ÷ 15 = **6.2 ✓✓**
- Range: 9 – 2 = **7 ✓✓**

6.3 Learners scoring 6 or more:
6, 6, 6, 6, 7, 7, 8, 8, 9 = **9 learners ✓✓** (2)

6.4 Below 5: 2, 3, 4 → 3 out of 15
(3 ÷ 15) × 100 = **20% ✓✓✓** (3)

6.5 Frequency Table (example):

Mark	**Frequency**
2	1 ✓
3	1 ✓
4	1 ✓
5	3 ✓
6	4 ✓
7	2 ✓
8	2 ✓
9	1 ✓

✓✓✓✓ (4)

6.6 Suggestion:

- More revision/tests on lower scores
- Use interactive methods
- Small group support ✓✓ (2)

TOTAL : 100