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 7 pages including the cover page.

SECTION A: PERSONAL FINANCE & PERCENTAGES (30 MARKS)

Question 1: Grocery Budgeting (10 marks) Lindiwe receives R1 200 per month for groceries. Her grocery expenses are:

Item	Cost per month
Bread	R160
Milk	R180
Vegetables	R250
Meat	R300
Toiletries	R120

1.1 Calculate her total grocery expenses. (2)

1.2 How much money remains after groceries? (2)

1.3 What percentage of her budget is spent on vegetables? (2)

1.4 Lindiwe decides to cut her meat spending by 10%. How much will she save? (2)

1.5 Suggest one benefit of tracking a personal budget. (2)

Question 2: Discount and VAT (10 marks) Thabo buys a school uniform set:

- Shirt: R120
- Pants: R180
- Shoes: R300 He gets a 15% discount on the total and must pay 15% VAT on the discounted total.

2.1 Calculate the total cost before discount. (2)

2.2 Calculate the amount of discount received. (2)

2.3 Calculate the cost after discount. (2)

2.4 Calculate the final amount including VAT. (2)

2.5 Why does the government charge VAT? (2)

Question 3: Percentage Increase and Decrease (10 marks)

3.1 A bottle of juice increased in price from R15 to R18. Calculate the percentage increase. (2)

3.2 A calculator was sold for R120, but later reduced to R90. Calculate the percentage decrease. (2)

3.3 A cellphone's value dropped by 25% in one year. If it cost R4 000, what is its value now? (2)

3.4 Why is percentage useful in comparing changes over time? (2)

3.5 A shop increases all prices by 10%. How much will an item that cost R85 now cost? (2)

SECTION B: MEASUREMENT & SCALE (30 MARKS)

Question 4: Floor Plan and Area (15 marks)

A classroom is drawn on a scale of 1:100. On the plan, the room measures 6 cm by 5 cm.

4.1 What are the real dimensions of the room? (2)

4.2 Calculate the actual area of the classroom. (2)

4.3 The floor must be tiled. If 1 m² of tile costs R140, calculate the total cost. (3)

4.4 What are two reasons schools might tile classrooms instead of using carpets? (2)

4.5 Draw and label a scale drawing of a rectangular table 2 m long and 1 m wide using the same scale. (Draw in answer booklet) (3)

4.6 Why is it important to use the correct scale in drawings? (3)

Question 5: Conversion and Perimeter (15 marks)

A jogging track is 2.5 km long.

5.1 Convert this distance to meters. (1)

5.2 How many laps will a person jog to complete 10 km? (2)

5.3 A rectangular field has a length of 120 m and width of 80 m. Calculate the perimeter. (2)

5.4 How much fencing is needed to go around it if one side is not fenced? (2)

5.5 A person walks at a speed of 1.5 m per second. How long will it take to walk once around the full field? (3)

5.6 Suggest one reason why measurements are important in physical activities. (2)

5.7 If the track is redesigned as a circle with a radius of 400 m, calculate the circumference. ($\pi = 3.14$) (3)

SECTION C: DATA & CHANCE (40 MARKS)

Question 6: Survey – Favourite Subjects (20 marks) A survey of 50 learners shows:

- Maths: 15
- English: 10
- Life Orientation: 5
- Natural Science: 12
- History: 8

6.1 Represent the data as a bar graph. (Draw in answer space) (5)

6.2 What is the most popular subject? (1)

6.3 What percentage chose Life Orientation? (2)

6.4 How many more learners prefer Maths than English? (2)

6.5 Suggest two reasons why Maths might be the most popular. (2)

6.6 What is the mode of this data set? (1)

6.7 If another 5 students voted for History, how would this affect the mode? (2)

6.8 Which subject was least popular and why might that be? (2)

6.9 What is the median of this data set? (3)

Question 7: Probability (20 marks)

A bag contains 5 red, 3 blue, and 2 green balls.

7.1 What is the total number of balls? (1)

7.2 What is the probability of drawing a blue ball? (2)

7.3 If you draw one ball and then another without replacing the first, what is the probability both are red? (3)

7.4 Explain why replacement affects probability. (2)

7.5 What is the probability of drawing a ball that is not green? (2)

7.6 How likely is it to draw a red or blue ball? (2)

7.7 Why is understanding probability useful in real life? Give one example. (2)

7.8 If two students each draw one ball, what is the chance at least one draws green? (3)

TOTAL: 100 MARKS

MEMO

SECTION A: PERSONAL FINANCE & PERCENTAGES (30 MARKS)

Question 1: Grocery Budgeting (10 marks) 1.1 R160 + R180 + R250 + R300 + R120 = **R1 010** (2)

1.2 R1 200 − R1 010 = **R190** (2)

1.3 (R250 ÷ R1 200) × 100 = **20.83%** (2)

1.4 10% of R300 = **R30** (2)

1.5 Helps manage spending, avoid debt, and plan savings. (2)

Question 2: Discount and VAT (10 marks) 2.1 R120 + R180 + R300 = **R600** (2)

2.2 15% of R600 = **R90** (2)

2.3 R600 − R90 = **R510** (2)

2.4 15% of R510 = R76.50 → R510 + R76.50 = **R586.50** (2)

2.5 VAT helps fund public services like healthcare and education. (2)

Question 3: Percentage Increase and Decrease (10 marks) 3.1 (R3 ÷ R15) × 100 = **20%** increase (2)

3.2 (R30 ÷ R120) × 100 = **25%** decrease (2)

3.3 R4 000 − 25% = R4 000 − R1 000 = **R3 000** (2)

3.4 Shows relative changes regardless of amounts. (2)

3.5 10% of R85 = R8.50 → R85 + R8.50 = **R93.50** (2)

SECTION B: MEASUREMENT & SCALE (30 MARKS)

Question 4: Floor Plan and Area (15 marks) 4.1 6 cm = 6 m, 5 cm = 5 m → **6 m × 5 m** (2)

4.2 6 × 5 = **30 m²** (2)

4.3 30 × R140 = **R4 200** (3)

4.4 Easier to clean, more durable. (2)

4.5 Drawing with correct dimensions at scale 1:100. (3)

4.6 Prevents misrepresentation of real sizes. (3)

Question 5: Conversion and Perimeter (15 marks) 5.1 2.5 km = **2 500 m** (1)

5.2 10 km ÷ 2.5 km = **4 laps** (2)

5.3 2 × (120 + 80) = 2 × 200 = **400 m** (2)

5.4 400 − 120 = **280 m** (2)

5.5 400 ÷ 1.5 = **266.67 seconds or 4 min 27 sec** (3)

5.6 To track performance and improve training. (2)

5.7 2 × π × r = 2 × 3.14 × 400 = **2 512 m** (3)

SECTION C: DATA & CHANCE (40 MARKS)

Question 6: Survey – Favourite Subjects (20 marks) 6.1 Bar graph with 5 bars labelled correctly. (5)

6.2 **Maths** (1)

6.3 (5 ÷ 50) × 100 = **10%** (2)

6.4 15 − 10 = **5 learners** (2)

6.5 May be compulsory, seen as important for jobs. (2)

6.6 **Maths** (1)

6.7 History becomes 13. New mode: Maths and History tie. (2)

6.8 Life Orientation. Maybe less interest or value perceived. (2)

6.9 Order data: 5, 8, 10, 12, 15 → Median = **10** (3)

Question 7: Probability (20 marks) 7.1 5 + 3 + 2 = **10 balls** (1)

7.2 3 ÷ 10 = **0.3 or 30%** (2)

7.3 (5 ÷ 10) × (4 ÷ 9) = **20/90 = 2/9** (3)

7.4 It changes the number of total items and chances. (2)

7.5 8 ÷ 10 = **0.8 or 80%** (2)

7.6 5 + 3 = 8 → 8/10 = **80%** (2)

7.7 To assess risk, e.g., insurance, weather forecasts. (2)

7.8 1st not green: 8/10, 2nd not green: 8/10 → Both not green: 0.8 × 0.8 = 0.64 → At least one green = 1 − 0.64 = **0.36 or 36%** (3)

TOTAL: 100 MARKS