SMARTWIZ

GRADE11 MATHEMATICS LITERACY EXAM

MARKS: 100

MARKS	

TIME: 2 HOURS

SCHOOL _____

CLASS (eg. 4A) _____

SURNAME _____

NAME _____

Instructions for Learners:

- Read all instructions carefully before you begin the exam.
- Write your full name and student number clearly on the answer sheet/book.
- Answer all questions unless otherwise instructed.
- Show all your work/calculations where necessary.
- Write neatly and clearly.
- Use only a blue or black pen. Do not use correction fluid or tape.
- Electronic devices (calculators, cell phones, etc.) are not 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 result in immediate disqualification from the exam.

This exam consists of six pages, including the cover page.

QUESTION 1: SIMPLE INTEREST AND BUDGETING (20 marks)

1a. You invest R20,000 in a savings account that pays 9% simple interest per year. Calculate the amount in the account after 5 years.

1b. A family's monthly budget is as follows:

Expense	Amount (R)
Rent	4,500
Electricity	800
Groceries	3,200
Transport	1,200
Savings	1,000

Calculate the total monthly expenses and the percentage of the budget spent on groceries.

QUESTION 2: MEASUREMENT AND SCALE DRAWING (20 marks)

Below is a scale drawing of a garden in the shape of a trapezium:

2a. Calculate the actual lengths of the two parallel sides in meters.

2b. Calculate the actual area of the garden in square meters.

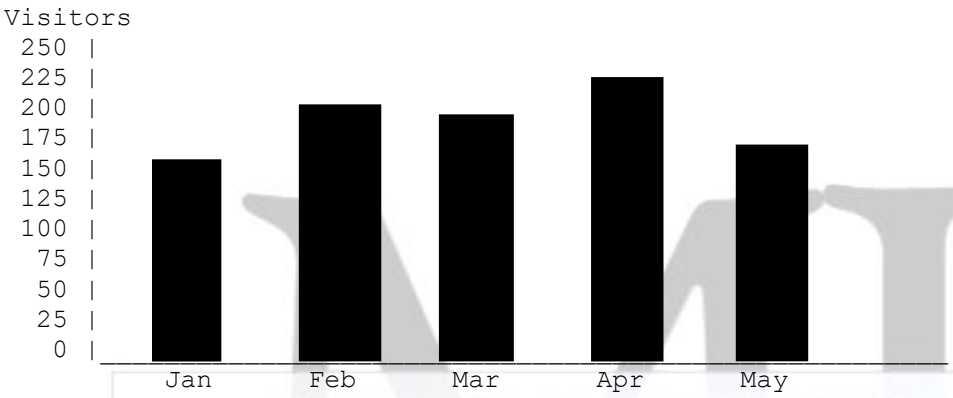
QUESTION 3: DATA HANDLING (20 marks)

The bar graph below shows the number of visitors to a museum over 5 months:

Here's the **bar graph** based on the data from Question 3 of the exam:

Month	Visitors
Jan	150
Feb	200
Mar	180
Apr	220
May	170

Bar Graph of Visitors to Museum (Jan - May)



3a. Calculate the average number of visitors per month.

3b. Which month had the highest number of visitors?

QUESTION 4: ALGEBRA AND FUNCTIONS (20 marks)

The total cost CCC (in Rands) of hiring a hall is given by:

C=500+75hC = 500 + 75hC=500+75h

where hhh is the number of hours the hall is hired.

4a. Calculate the cost of hiring the hall for 6 hours.

4b. If you have R1,225, how many hours can you hire the hall for?

QUESTION 5: GEOMETRY AND SURFACE AREA (20 marks)

A swimming pool is in the shape of a rectangular prism with length 12 m, width 6 m, and depth 2 m.

5a. Calculate the volume of the pool in cubic meters.

5b. Calculate the surface area of the pool (ignore the top surface).

END OF EXAM

TOTAL : 100

MEMO

QUESTION 1: SIMPLE INTEREST AND BUDGETING

1a. Simple interest:

I=P×r×t=20,000×0.09×5=9,000I = P \times r \times t = 20,000 \times 0.09 \times 5 = 9,000I=P×r×t=20,000×0.09×5=9,000

Amount after 5 years:

20,000+9,000=R29,00020,000 + 9,000 = R29,00020,000+9,000=R29,000

1b. Total monthly expenses:

4,500+800+3,200+1,200+1,000=R10,7004,500 + 800 + 3,200 + 1,200 + 1,000 = R10,7004,500+800+3,200+1,200+1,000=R10,700

Percentage spent on groceries:

3,20010,700×100≈29.91%\frac{3,200}{10,700} \times 100 \approx 29.91\%10,7003,200×100≈29.91%

QUESTION 2: MEASUREMENT AND SCALE DRAWING

2a. Actual lengths:

- 8 cm side:

8×2=16 m8 \times 2 = 16 \text{ m}8×2=16 m

- 5 cm side:

5×2=10 m5 \times 2 = 10 \text{ m}5×2=10 m

2b. Area of trapezium:

A=(a+b)2×h=(16+10)2×(6×2)A = \frac{(a + b)}{2} \times h = \frac{(16 + 10)}{2} \times (6 \times 2)A=2(a+b)×h=2(16+10)×(6×2)

Calculate height in meters:

6×2=12 m6 \times 2 = 12 \text{ m}6×2=12 m

Then area:

A=262×12=13×12=156 m2A = \frac{26}{2} \times 12 = 13 \times 12 = 156 \text{ m}^2A=226 ×12=13×12=156 m2

QUESTION 3: DATA HANDLING

3a. Average visitors per month:

150+200+180+220+1705=9205=184\frac{150 + 200 + 180 + 220 + 170}{5} = \frac{920}{5} = 1845150+200+180+220+170=5920=184

3b. Month with highest visitors:
April (220 visitors)

QUESTION 4: ALGEBRA AND FUNCTIONS

4a. Cost for 6 hours:

C=500+75×6=500+450=R950C = 500 + 75 \times 6 = 500 + 450 = R950C=500+75×6=500+450=R950

4b. Number of hours for R1,225:

1,225=500+75h ⟹ 75h=725 ⟹ h=72575=9.67≈9 hours (full hours)1,225 = 500 + 75h \implies 75h = 725 \implies h = \frac{725}{75} = 9.67 \approx 9 \text{ hours (full hours)}1,225=500+75h⟹75h=725⟹h=75725=9.67≈9 hours (full hours)

QUESTION 5: GEOMETRY AND SURFACE AREA

5a. Volume of pool:

V=l×w×d=12×6×2=144 m3V = l \times w \times d = 12 \times 6 \times 2 = 144 \text{ m}^3V=l×w×d=12×6×2=144 m3

5b. Surface area excluding top:

- Bottom:

12×6=72 m212 \times 6 = 72 \text{ m}^212×6=72 m2

- Two sides (length x depth):

2×(12×2)=2×24=48 m22 \times (12 \times 2) = 2 \times 24 = 48 \text{ m}^22×(12×2)=2×24=48 m2

- Two ends (width x depth):

2×(6×2)=2×12=24 m22 \times (6 \times 2) = 2 \times 12 = 24 \text{ m}^22×(6×2)=2×12=24 m2

Total surface area (without top):

72+48+24=144 m272 + 48 + 24 = 144 \text{ m}^272+48+24=144 m2

END OF MEMO

TOTAL : 100