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.

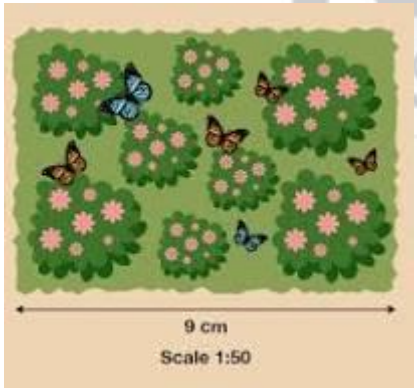
QUESTION 1: FINANCIAL MATHEMATICS (20 marks)

1a. You buy a laptop for R12,000. It depreciates by 20% per year using the reducing balance method. Calculate its value after 2 years.

1b. A loan of R15,000 attracts simple interest at 10% per annum. Calculate the total amount payable after 3 years.

QUESTION 2: MEASUREMENT AND SCALE DRAWINGS (20 marks)

Look at the scale drawing below of a park:

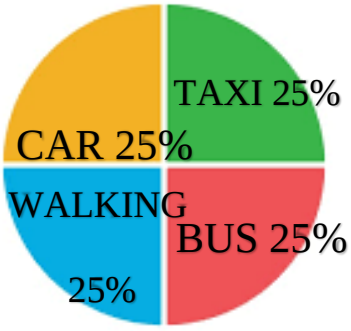


2a. Calculate the actual length and width of the park in meters.

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

QUESTION 3: DATA HANDLING (20 marks)

The pie chart below shows the preferred types of transport for a group of learners:



3a. If there are 200 learners in total, calculate how many prefer each type of transport.

- Taxi: _____
- Bus: _____
- Walking: _____
- Car: _____

3b. Which mode of transport is the least preferred?

_____

_____

QUESTION 4: PATTERNS AND ALGEBRA (20 marks)

The number of passengers PPP that a bus can carry is given by the formula:

P=45+12nP = 45 + 12nP=45+12n

where nnn is the number of extra seats added.

4a. Calculate the number of passengers if 3 extra seats are added.

_____

4b. If the bus carries 93 passengers, how many extra seats were added?

_____

_____

QUESTION 5: GEOMETRY AND SPATIAL MEASUREMENT (20 marks)

Look at the figure below:

5a. Calculate the length of the hypotenuse.

5b. Calculate the area of the triangle.

END OF EXAM

TOTAL : 100

MEMO

QUESTION 1: FINANCIAL MATHEMATICS

1a. Depreciation (reducing balance):
Year 1:

12,000×(1−0.20)=12,000×0.80=9,60012,000 \times (1 - 0.20) = 12,000 \times 0.80 = 9,60012,000×(1−0.20)=12,000×0.80=9,600

Year 2:

9,600×0.80=7,6809,600 \times 0.80 = 7,6809,600×0.80=7,680

Answer: R7,680

1b. Simple interest:

I=P×r×t=15,000×0.10×3=4,500I = P \times r \times t = 15,000 \times 0.10 \times 3 = 4,500I=P×r×t=15,000×0.10×3=4,500

Total amount payable:

15,000+4,500=R19,50015,000 + 4,500 = R19,50015,000+4,500=R19,500

QUESTION 2: MEASUREMENT AND SCALE DRAWINGS

2a. Actual length and width:
Length:

10 cm×5=50 m10 \text{ cm} \times 5 = 50 \text{ m}10 cm×5=50 m

Width:

6 cm×5=30 m6 \text{ cm} \times 5 = 30 \text{ m}6 cm×5=30 m

2b. Area:

50×30=1,500 m250 \times 30 = 1,500 \text{ m}^250×30=1,500 m2

QUESTION 3: DATA HANDLING

3a. Number of learners preferring each mode:

- Taxi:

200×0.40=80200 \times 0.40 = 80200×0.40=80

- Bus:

200×0.25=50200 \times 0.25 = 50200×0.25=50

- Walking:

200×0.20=40200 \times 0.20 = 40200×0.20=40

- Car:

200×0.15=30200 \times 0.15 = 30200×0.15=30

3b. Least preferred transport:
Car (15%)

QUESTION 4: PATTERNS AND ALGEBRA

4a. For n=3n=3n=3:

P=45+12×3=45+36=81P = 45 + 12 \times 3 = 45 + 36 = 81P=45+12×3=45+36=81

4b. For P=93P=93P=93:

93=45+12n ⟹ 12n=48 ⟹ n=493 = 45 + 12n \implies 12n = 48 \implies n = 493=45+12n⟹12n=48⟹n=4

QUESTION 5: GEOMETRY AND SPATIAL MEASUREMENT

Given right triangle: base b=8b=8b=8 m, height h=15h=15h=15 m

5a. Hypotenuse ccc:

c=b2+h2=82+152=64+225=289=17 mc = \sqrt{b^2 + h^2} = \sqrt{8^2 + 15^2} = \sqrt{64 + 225} = \sqrt{289} = 17 \text{ m}c=b2+h2=82+152=64+225=289=17 m

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5b. Area of triangle:

12×b×h=12×8×15=60 m2\frac{1}{2} \times b \times h = \frac{1}{2} \times 8 \times 15 = 60 \text{ m}^221×b×h=21×8×15=60 m2

END OF MEMO

TOTAL : 100