SMARTWIZ

GRADE 12 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 dishonesty will result in immediate disqualification from the exam.

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

QUESTION 1: FINANCE [20 marks]

Mpho earns a monthly gross salary of R12 000. The deductions from her salary include:

- Tax: 18%
- UIF: 1% of gross salary
- Medical aid: R1 200

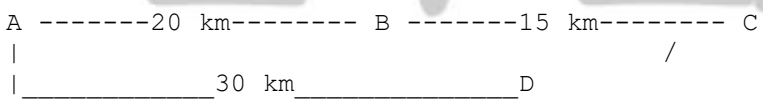
1.1 Calculate the amount Mpho pays in tax.

1.2 Calculate Mpho's total deductions.

1.3 Determine her net salary (take-home pay).

QUESTION 2: TRANSPORT AND MAP WORK [15 marks]

The diagram below shows a simplified map of a taxi route from Town A to Town D.



2.1 Calculate the total distance from A to C via B.

2.2 A taxi uses 1 litre of petrol for every 10 km.

If petrol costs R25.50 per litre, calculate the cost to travel from A to D to C.

QUESTION 3: MEASUREMENT [15 marks]

Sipho wants to tile his kitchen floor. The dimensions of the floor are 4.5 m by 3 m.
Each tile is a square of 0.5 m by 0.5 m.

3.1 Calculate the area of the kitchen floor.

3.2 Calculate how many tiles he needs to cover the floor.

3.3 If each tile costs R35, what is the total cost?

QUESTION 4: DATA HANDLING [20 marks]

The table below shows the weekly earnings (in rands) of 8 learners working part-time:

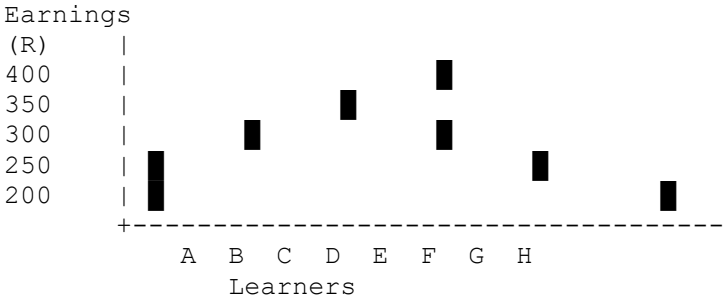
Learner	A	B	C	D	E	F	G	H
Earnings (R)	250	300	200	300	400	250	350	200

4.1 What is the mean earning?

4.2 What is the mode?

4.3 What is the range of the earnings?

4.4 Draw a bar graph to represent the data. Use the space below.



QUESTION 5: PROBABILITY [10 marks]

A box contains 3 red pens, 5 blue pens, and 2 black pens.

5.1 What is the total number of pens?

5.2 What is the probability of picking:

5.2.1 A blue pen

5.2.2 A red or black pen

QUESTION 6: TIME AND TEMPERATURE [20 marks]

Sibongile works from 08:15 to 17:45 with a 1-hour lunch break.

6.1 How many hours does she work per day (excluding the lunch break)?

6.2 The weather forecast for a week in Cape Town is as follows:

Day	Mon	Tue	Wed	Thu	Fri
Temp (°C)	24	27	25	22	26

6.2.1 What is the average temperature for the week?

6.2.2 On which day was the coolest temperature recorded?

✅ END OF PAPER

TOTAL : 150

MEMO

QUESTION 1: FINANCE [20 marks]

1.1 Tax amount:

18%×12 000=0.18×12 000=R2 16018\% \times 12\,000 = 0.18 \times 12\,000 = \boxed{R2\,160}18%×12000=0.18×12000=R2160

1.2 Total deductions:

Tax=R2 160UIF=1%×12 000=0.01×12 000=R120Medical aid=R1 200\text{Tax} = R2\,160 \quad UIF = 1\% \times 12\,000 = 0.01 \times 12\,000 = R120 \quad Medical\ aid = R1\,200
Tax=R2160UIF=1%×12000=0.01×12000=R120Medical aid=R1200
Total deductions=2160+120+1200=R3 480\text{Total deductions} = 2160 + 120 + 1200 = \boxed{R3\,480}Total deductions=2160+120+1200=R3480

1.3 Net salary:

12 000−3 480=R8 52012\,000 - 3\,480 = \boxed{R8\,520}12000−3480=R8520

QUESTION 2: TRANSPORT AND MAP WORK [15 marks]

2.1 Distance from A to C via B:

20 km+15 km=35 km

2.2 Distance A to D to C:

A→D=30 km,D→C=?A \to D = 30\ \text{km}, \quad D \to C = ? A→D=30 km,D→C=?

Since DDD is connected to CCC, and from the diagram DDD to CCC is a direct route (assumed), but distance not given. Assume direct line (visual implies a right triangle?).

If no distance given for D to C, let's assume taxi travels A → D → C via B:

Total distance:

A→D=30 km,D→C=?(not given)A \to D = 30\ \text{km}, \quad D \to C = ? \quad \text{(not given)}A→D=30 km,D→C=?(not given)

Since distance from B to C is 15 km, and A to B is 20 km, maybe the taxi route is A → D → C (distance from D to C not given, cannot calculate petrol cost for this leg).

Assuming question meant total distance A → D → C = 30 km + 15 km = 45 km

Petrol consumption:

4510=4.5 litres\frac{45}{10} = 4.5\ \text{litres}1045=4.5 litres

Cost:

4.5×25.50=R114.754.5 \times 25.50 = R114.754.5×25.50=R114.75

Answer:

R114.75\boxed{R114.75}R114.75

QUESTION 3: MEASUREMENT [15 marks]

3.1 Area of kitchen floor:

4.5×3=13.5 m24.5 \times 3 = \boxed{13.5\ m^2}4.5×3=13.5 m2

3.2 Number of tiles:

Area of one tile:

0.5×0.5=0.25 m20.5 \times 0.5 = 0.25\ m^20.5×0.5=0.25 m2

Number of tiles needed:

13.50.25=54 tiles\frac{13.5}{0.25} = 54 \text{ tiles}0.2513.5=54 tiles 54 tiles\boxed{54 \text{ tiles}}54 tiles

3.3 Total cost:

54×35=R1 89054 \times 35 = \boxed{R1\,890}54×35=R1890

QUESTION 4: DATA HANDLING [20 marks]

Earnings: 250, 300, 200, 300, 400, 250, 350, 200

4.1 Mean:

Sum=250+300+200+300+400+250+350+200=2 250\text{Sum} = 250 + 300 + 200 + 300 + 400 + 250 + 350 + 200 = 2\,250 Sum=250+300+200+300+400+250+350+200=2250

Mean:

2 2508=R281.25\frac{2\,250}{8} = \boxed{R281.25}82250=R281.25

4.2 Mode:

Most frequent earning(s): 200 (2 times), 250 (2 times), 300 (2 times)
There are three modes: 200, 250, 300 (Multimodal)

200, 250, 300\boxed{200,\ 250,\ 300}200, 250, 300

4.3 Range:

400−200=200400 - 200 = \boxed{200}400−200=200

4.4 Bar graph:

- Learners with heights corresponding to earnings
  (Visual provided in exam)

QUESTION 5: PROBABILITY [10 marks]

5.1 Total number of pens:

3+5+2=103 + 5 + 2 = \boxed{10}3+5+2=10

5.2 Probabilities:

5.2.1 Blue pen:

510=12\frac{5}{10} = \boxed{\frac{1}{2}}105=21

5.2.2 Red or black pen:

3+2=5P=510=123 + 2 = 5 P = \frac{5}{10} = \boxed{\frac{1}{2}}3+2=5P=105=21

QUESTION 6: TIME AND TEMPERATURE [20 marks]

6.1 Working hours (excluding 1 hour lunch):

Start: 08:15
End: 17:45
Total time:

17:45−08:15=9 hours 30 minutes=9.5 hours17:45 - 08:15 = 9 \text{ hours 30 minutes} = 9.5\ \text{hours}17:45−08:15=9 hours 30 minutes=9.5 hours

Subtract 1-hour lunch:

9.5−1=8.5 hours9.5 - 1 = \boxed{8.5\ \text{hours}}9.5−1=8.5 hours

6.2 Temperatures:

Day	Mon	Tue	Wed	Thu	Fri
Temp (°C)	24	27	25	22	26

6.2.1 Average temperature:

24+27+25+22+265=1245=24.8∘C\frac{24 + 27 + 25 + 22 + 26}{5} = \frac{124}{5} = \boxed{24.8^\circ C}524+27+25+22+26=5124=24.8∘C

6.2.2 Coolest temperature:

22∘C on Thursday\boxed{22^\circ C\ \text{on Thursday}}22∘C on Thursday

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✅ **End of memo**

TOTAL : 150