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: PERSONAL FINANCE [20 marks]

Lindiwe buys a laptop on credit for R18 000. The credit agreement charges an interest rate of 15% simple interest per annum. The loan term is 2 years.

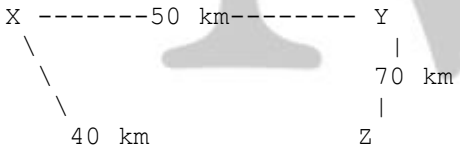
1.1 Calculate the total interest payable on the laptop.

1.2 Calculate the total amount Lindiwe will pay after 2 years.

1.3 Calculate the monthly repayment amount (assume repayments are equal every month for 2 years).

QUESTION 2: TRAVEL AND DISTANCE [15 marks]

The map below shows a bus route between towns.



2.1 Calculate the total distance from X to Z via Y.

2.2 If the bus travels at an average speed of 60 km/h, calculate the time taken to travel from X to Z via Y.

QUESTION 3: MEASUREMENT [15 marks]

A cylindrical water tank has a radius of 2 m and a height of 5 m.

3.1 Calculate the volume of the tank in cubic meters.

3.2 Calculate the surface area of the tank (including top and bottom).

QUESTION 4: DATA HANDLING [20 marks]

The following data shows the number of hours 7 learners studied last week:

Learner	P	Q	R	S	T	U	V
Hours	12	8	15	10	9	8	11

4.1 Calculate the median number of hours studied.

4.2 Calculate the mean number of hours studied.

4.3 What is the mode?

QUESTION 5: PROBABILITY [10 marks]

A spinner is divided into 4 equal sections colored Red, Green, Blue, and Yellow.

5.1 What is the probability of the spinner landing on Blue?

5.2 What is the probability of the spinner landing on either Red or Yellow?

QUESTION 6: TIME & TEMPERATURE [20 marks]

The temperature readings in Johannesburg over 5 days were: 18°C, 21°C, 20°C, 19°C, and 22°C.

6.1 Calculate the average temperature over the 5 days.

6.2 The sunrise time on Monday was at 06:15 and the sunset was at 18:30. Calculate the length of the day in hours and minutes.

✅ **END OF PAPER**

TOTAL : 100

MEMO

QUESTION 1: PERSONAL FINANCE [20 marks]

1.1 Total interest payable:

Simple Interest (SI) formula:

SI=P×r×tSI = P \times r \times tSI=P×r×t

Where:
P=18,000P = 18,000P=18,000,
r=15%=0.15r = 15\% = 0.15r=15%=0.15,
t=2 yearst = 2\ \text{years}t=2 years

SI=18,000×0.15×2=18,000×0.3=R5,400SI = 18,000 \times 0.15 \times 2 = 18,000 \times 0.3 = \boxed{R5,400}SI=18,000×0.15×2=18,000×0.3=R5,400

1.2 Total amount payable:

18,000+5,400=R23,40018,000 + 5,400 = \boxed{R23,400}18,000+5,400=R23,400

1.3 Monthly repayment (24 months):

23,40024=R975 per month\frac{23,400}{24} = \boxed{R975\ \text{per month}}2423,400 =R975 per month

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QUESTION 2: TRAVEL AND DISTANCE [15 marks]

2.1 Total distance from X to Z via Y:

X→Y=50 km,Y→Z=70 km⇒Total distance=50+70=120 kmX \to Y = 50\ km, \quad Y \to Z = 70\ km \Rightarrow \text{Total distance} = 50 + 70 = \boxed{120\ km}X→Y=50 km,Y→Z=70 km⇒Total distance=50+70=120 km

2.2 Time taken:

Speed = 60 km/h

t=dv=12060=2 hourst = \frac{d}{v} = \frac{120}{60} = \boxed{2\ \text{hours}}t=vd=60120=2 hours

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QUESTION 3: MEASUREMENT [15 marks]

Cylinder formulas:

Volume=πr2hSurface area=2πrh+2πr2\text{Volume} = \pi r^2 h \quad \text{Surface area} = 2\pi r h + 2\pi r^2Volume=πr2hSurface area=2πrh+2πr2

Given:
r=2 mr = 2\,mr=2m,
h=5 mh = 5\,mh=5m,
π≈3.14\pi \approx 3.14π≈3.14

3.1 Volume:

V=3.14×22×5=3.14×4×5=3.14×20=62.8 m3V = 3.14 \times 2^2 \times 5 = 3.14 \times 4 \times 5 = 3.14 \times 20 = \boxed{62.8\ m^3}V=3.14×22×5=3.14×4×5=3.14×20=62.8 m3

3.2 Surface area:

SA=2×3.14×2×5+2×3.14×22=62.8+25.12=87.92 m2SA = 2 \times 3.14 \times 2 \times 5 + 2 \times 3.14 \times 2^2 = 62.8 + 25.12 = \boxed{87.92\ m^2}SA=2×3.14×2×5+2×3.14×22=62.8+25.12=87.92 m2

QUESTION 4: DATA HANDLING [20 marks]

Hours: 12, 8, 15, 10, 9, 8, 11

4.1 Median:

Order data: 8, 8, 9, 10, 11, 12, 15
Median = middle value = 4th value = 10\boxed{10}10

4.2 Mean:

Sum=12+8+15+10+9+8+11=73\text{Sum} = 12 + 8 + 15 + 10 + 9 + 8 + 11 = 73Sum=12+8+15+10+9+8+11=73 Mean=737≈10.43\text{Mean} = \frac{73}{7} \approx \boxed{10.43}Mean=773≈10.43

4.3 Mode:

Most frequent value: 8 (occurs twice)

8\boxed{8}8

QUESTION 5: PROBABILITY [10 marks]

Equal sections → each section probability = 14\frac{1}{4}41

5.1 Probability spinner lands on Blue:

14\boxed{\frac{1}{4}}41

5.2 Probability spinner lands on Red or Yellow:

P(Red or Yellow)=14+14=12P(\text{Red or Yellow}) = \frac{1}{4} + \frac{1}{4} = \boxed{\frac{1}{2}}P(Red or Yellow)=41+41=21

QUESTION 6: TIME & TEMPERATURE [20 marks]

Temps: 18, 21, 20, 19, 22

6.1 Average temperature:

18+21+20+19+225=1005=20∘C\frac{18 + 21 + 20 + 19 + 22}{5} = \frac{100}{5} = \boxed{20^\\circ C}518+21+20+19+22=5100=20∘C

6.2 Length of day (sunrise 06:15, sunset 18:30):

From 06:15 to 18:15 = 12 hours
Plus 15 minutes from 18:15 to 18:30

12 hours and 15 minutes\boxed{12\ \text{hours and}\ 15\ \text{minutes}}12 hours and 15 minutes

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✅ **End of memo**

TOTAL ; 100