

## ***Subject: Mathematical Literacy***

### ***Grade: 11***

#### **Written questions**

##### **Question 1: Number Patterns and Relationships**

1.1 A sequence is given by  $T_n = 3n + 7$ .

Calculate the 18th term of the sequence, showing all working. (3)

1.2 Using the sequence from 1.1, calculate the sum of the first 10 terms. (4)

1.3 The number of chairs in the  $n$  row of a theatre is  $T_n = n^2 + 2n$ .

Calculate the number of chairs in the 8th row. (3)

1.4 Determine whether the sequence 5, 10, 20, 40, ... is arithmetic or geometric?  
Explain your answer fully. (3)

##### **Question 2: Finance**

2.1 A loan of R15 000 attracts simple interest at 8% per annum. Calculate the total interest and amount to be paid after 4 years. (4)

2.2 Mr. Molefe invests R25 000 at 10% compound interest, compounded annually. Calculate the amount after 3 years. Show all calculations. (4)

2.3 A jacket is sold for R1 250 after a 20% discount. Calculate the original price of the jacket before the discount. (4)

2.4 A car purchased for R200 000 depreciates by 12% annually. Calculate its value after 2 years. Show all workings. (4)

##### **Question 3: Measurement**

3.1 Calculate the perimeter of a triangular garden with sides measuring 12.5 m, 7.8 m, and 9.7 m. Show all calculations. (3)

3.2 A cylindrical water tank has a radius of 1.3 m and a height of 5 m. Calculate the volume of water it can hold. Use  $\pi = 3.14$ . (4)

3.3 Convert 8 250 millilitres into litres and express the answer in decimal form. (2)

3.4 The area of a square playground is  $196 \text{ m}^2$ . Calculate the length of one side. (3)

3.5 A rectangular swimming pool is 10 m long, 6 m wide and 1.5 m deep. Calculate the surface area of the pool (ignore thickness). (4)

#### Question 4: Maps, Plans and Graphs

4.1 A map has a scale of 1:50 000. Two towns are 12 cm apart on the map. Calculate the actual distance in kilometres. (3)

4.2 A line graph shows the monthly sales of a shop over 6 months as follows: 2200, 2350, 2400, 2500, 2600, 2700 units. Calculate the average monthly sales. (3)

4.3 Explain the meaning of the slope of a distance-time graph. Use an example in your explanation. (3)

4.4 Draw a line graph representing the sales data given in 4.2. (4)

#### Question 5: Data Handling

5.1 The following test scores were recorded: 45, 52, 48, 50, 52, 47, 49, 53. Calculate the mean, median, and mode of these scores. Show all calculations. (6)

5.2 In a survey of 400 people, 42% preferred brand A, 33% preferred brand B, and the rest preferred brand C. Calculate the number of people who preferred brand C. (3)

5.3 Construct a bar graph to show the preferences in question 5.2. (4)

5.4 Calculate the range of the test scores in 5.1. (2)