

Subject: Mathematical Literacy

Grade: 10

Written questions

Question 1: Numbers, Calculations, Rounding, Ratios, Rates and Percentages

- 1.1 Convert 0.875 to a fraction in its simplest form. (2)
- 1.2 Express $\frac{3}{5}$ as a decimal and a percentage. (3)
- 1.3 Simplify the following using BODMAS: $5 + 3 \times (12 - 4) \div 2$. (3)
- 1.4 Round 2634.789 to: a) The nearest hundred (1) b) Two decimal places (1)
- 1.5 The ratio of boys to girls in a class is 5:7. If there are 60 learners, how many are girls? (3)
- 1.6 A car travels 360 km in 4 hours. Calculate its average speed in km/h. (2)
- 1.7 A shop sells a TV for R4 000 but offers a 12.5% discount. Calculate the discount amount and the sale price. (4)
- 1.8 An item's price increases from R500 to R575. Calculate the percentage increase. (3)

Question 2: Patterns, Relationships & Representations

- 2.1 Consider the sequence: 3; 6; 12; 24; ... a) State the rule for this pattern. (2) b) Calculate the 5th term. (2)
- 2.2 Plot the following points on a rough sketch and describe the relationship: (1,2), (2,4), (3,6), (4,8). Is it direct proportion? Explain. (3)
- 2.3 A formula to calculate area of a rectangle is $A = l \times w$. a) Calculate A if $l = 5$ m and $w = 3$ m. (2) b) If the area is 24 m^2 and width is 4 m, calculate the length. (2)

Question 3: Data Handling

3.1 The marks out of 10 for 7 learners are: 4, 7, 6, 7, 8, 5, 7. a) Find the mean. (2) b) Find the median. (2) c) Find the mode. (1) d) Find the range. (1)

3.2 Draw a bar graph using the data: 4, 7, 6, 7, 8, 5, 7. (3)

3.3 A survey shows 60% of learners prefer soccer. Represent this on a pie chart by calculating the correct sector angle. (2)

3.4 The probability of rain tomorrow is 0.3. a) What is the probability it will not rain? (1) b) Express the probability of rain as a percentage. (1)

3.5 A bag contains 5 blue pens, 3 red pens and 2 green pens. a) What is the probability of selecting a blue pen? (2) b) What is the probability of not selecting a green pen? (2)

Question 4: Finance

4.1 Thabo earns R7 500 per month. His deductions include tax of R800, UIF of R75 and medical aid of R600. a) Calculate Thabo's net income. (3)

4.2 Calculate the VAT amount on an item costing R1 200 excluding VAT. (2)

4.3 A loan of R5 000 is taken at a simple interest rate of 10% p.a. for 3 years. Calculate the total interest and amount to be repaid. (4)

4.4 An electricity tariff costs 95c per kWh for the first 200 kWh and R1.20 per kWh thereafter. Calculate the total cost for 250 kWh of electricity. (5)

4.5 A budget includes income of R10 000 and expenses of R8 500. a) Determine the budget surplus or deficit. (2)

Question 5: Measurement

5.1 Convert the following: a) 2.5 km to meters. (1) b) 500 ml to liters. (1) c) 37°C to Fahrenheit using $F = (9/5 \times C) + 32$. (2)

5.2 Calculate the perimeter and area of a rectangle with length 8m and width 3m. (4)

5.3 Calculate the volume of a box with dimensions 2m × 3m × 4m. (2)

5.4 A wall requires painting. The wall measures $6\text{m} \times 2.5\text{m}$. If 1 litre of paint covers 5m^2 , how many litres are needed? (3)

5.5 A person runs 5 km in 25 minutes. Calculate their average speed in km/h. (3)

Question 6: Maps, Plans & Other Representations

6.1 A map has a scale of 1:1 000. The distance between two towns on the map is 5 cm. What is the actual distance in meters? (3)

6.2 On a building plan, the length of a room is shown as 6 cm. The scale is 1:50. What is the actual length of the room? (2)

6.3 Identify three symbols commonly found on building plans and state their purpose. (3)

6.4 A model of a car is made to the scale 1:20. The model length is 15 cm. Calculate the real length of the car. (2)

Question 7: Probability

7.1 A dice is rolled. List all possible outcomes. (1)

7.2 What is the probability of rolling an even number? (2)

7.3 Two coins are tossed. Use a tree diagram or list to show all possible outcomes. (4)

7.4 A spinner has 5 equal sections numbered 1 to 5. What is the probability of landing on: a) A number greater than 3? (2) b) An odd number? (2)

Total Marks: 150