Grade 11 Mathematical Literacy: Memorandum Paper 1

1.1.1 \( \frac{1}{2} \times 60 = 150 \text{ minutes} \)

1.1.2 Rate
\( = 100 \div 150 \) \( \checkmark \)
\( = 0,67 \text{ marks per minute} \) OR
\( \frac{1}{2} \) minutes/mark

1.1.3 Marks to be completed in 15 minutes
\( = 0,67 \times 15 \) \( \checkmark \)
\( = 10 \text{ marks} \) \( \checkmark \)
\( \Rightarrow \text{ should be on question 1.4} \)
OR
Marks to be completed in 15 minutes
\( = 15 \div \frac{1}{2} \) \( \checkmark \)
\( = 10 \text{ marks} \) \( \checkmark \)
\( \Rightarrow \text{ should be on question 1.4} \)

1.2.1 410
1.2.2 9
1.2.3 10

1.3.1 49 \( \div 11 = 4.45 \)
OR
4 \( \times 11 = 44 \)
\( \Rightarrow \) maximum number of soccer teams is 4

1.3.2 Total number of Grade 11 learners
\( = (1+3) \times 49 \) \( \checkmark \)
\( = 196 \text{ learners} \) \( \checkmark \)

1.4 8\% \( \times 4 \)
\( = 0,5 \text{ hours} \) \( \checkmark \)
\( \Rightarrow \text{ they now practice for 4,5 hours} \)

1.5 (50 \( \div 196 \)) \( \times 100 \)
\( = 25,5 \% \)

1.6 Discount
\( = 20\% \times 180 \)
\( = R36 \)
\( \Rightarrow \text{ new price is 180} - 36 = R144 \)

1.7 Cost of bananas
\( = 0,4 \times 5,95 \)
\( = R2,38 \)

1.8 Accept any mass (weight) greater than
59,6kg and less than 59,8kg

2.1 Date = 13 July 2007
Time = 13:06

2.2 With an asterisk OR star next to the price.

2.3 There are 6 items for on the till slip.

2.4 The rounding entry indicates the amount of money deducted so as to round off the total to a multiple of 5 cents. This is necessary because there is no coin with a value less than 5 cents.

2.5 R39,75
Reason: The R39,79 total is rounded down by R0,04 to R39,75. OR
Reason: R10,25 change is received after the customer pays R50.

3.1 R2,85
3.2 Cost of call
\( = 2,75 \times 3 \)
\( = R8,25 \)

3.3 Length of call
\( = 24,40 \div 2,20 \)
\( = 11 \text{ minutes} \)

3.4 Off-peak tariff = R1,12
Cost = 11min \( \times R1,12 \)
She would have saved:
R24,40 \( \div R12,32 = R12,08 \)

4.1 Vol = 3,14 \( \times 3,5 \times 10,5 \)
\( = 403,9\text{cm}^3 \)

4.2 Breadth of label = 10,5cm
Length of label = 2 \( \times 3,14 \times 3,5 \)
\( = 21,98\text{cm} \)
The dimensions of the label are 10,5cm by 21,98cm

4.3 75cm \( \div 21,98 = 3,41 \)
\( \Rightarrow \text{ this means you can fit in 3 labels on this side.} \)
65cm \( \div 10,5 = 6,19 \)
\( \Rightarrow \text{ this means you can fit in 6 labels on this side.} \)
Number of label = 3 \( \times 6 \)
\( = 18 \text{ labels} \)

5.1 4\% Percentage of females = 51 + 9 = 60\%
\( \Rightarrow \text{ Number of females} \)
\( = 60\% \times 2435 \)
\( = 1 461 \text{ females} \)

5.2 Percentage of females = 51 + 9 = 60\%
\( \Rightarrow \text{ Number of females} \)
\( = 60\% \times 2435 \)
\( = 1 461 \text{ females} \)

5.3 Total number of males
\( = 2 432 \div 459 = 973 \)
Number of males who are HIV positive
\( = 4\% \times 2432 \)
\( = 97 \text{ males} \)
\( \Rightarrow \text{ Percentage of males who are HIV positive} \)
\( = 97 \div 973 \times 100 = 10\% \)
OR
Percentage of males = 100 \( - 60 = 40\% \)
\( \Rightarrow \text{ Percentage of males who are HIV positive} \)
\( = 4 \div 10 \times 100 = 10\% \)

6.1 To break even, profit = 0
\( \Rightarrow f = \text{ C} \)
\( \Rightarrow 4x = x + 1 200 \)
\( \Rightarrow 3x = 1 200 \)
\( \Rightarrow x = 400 \)
\( \Rightarrow \text{ The company must produce 400 soccer balls in order to break even.} \)

6.2 On the next page

6.3 On the graph on the next page

6.4 Profit = Income – cost
\( = 4 \times 905 \div (905 + 1200) \)
\( = R1515 \)
6.2

Graph showing the revenue and costs of a company as a function of the number of soccer balls produced.

C = x + 1200

R = 4x

7.1 The 30 to 34 year old age group.

7.2 The 20 to 24 year old age group and the 40 to 44 year old age groups had the same HIV prevalence.

7.3 Amongst the 25 to 29 year old age group.

7.4 13% × 132 = 17 people

7.5 HIV prevalence in females = 33,5%  
HIV prevalence in males = 44,5% – 33,5% = 11%

⇒ HIV prevalence was about 22,5% higher in females aged between 25 and 29, than in males.

8.1 A² = 3,000² + 1,200 ⇐ A = 3,606 m

8.2 The instrument used to measure the dimensions was probably a tape measure, which measures accurately to the nearest millimeter.

When working with meters, three decimal places is a millimeter, because a millimeter is one thousandth of a meter.

8.3.1 Surface area = 6,000 × 10,000
= 60,000 m²

8.3.2 150mm = (150 / 1000)m = 0,150 m

8.3.3 Volume = area of base × height
= 60,000 × 0,150
= 9,000 m³

8.3.4 Number of bags of cement = 9,000 × 5
= 45

8.3.5 Cost of cement = 45 × R55,99
= R2 519,55