MATHEMATICAL LITERACY

GRADE 12 PAPER 2

AUGUST 2014

TOTAL: 150

TIME: 3 HOURS

INSTRUCTIONS

1. This question paper consists of **8** questions. Answer all the questions.

2. Number the answers correctly according to the numbering system used in this question paper.

3. An approved calculator (non-programmable and non-graphical) may be used, unless stated otherwise.

4. All calculations must be clearly shown.

5. All the final answers must be rounded off to two decimal places, unless stated otherwise.

6. Units of measurement must be indicated where applicable.

QUESTION 1:

The Grade 11 learners need to organize the matric farewell. The learners are divided in 2 groups to investigate the cost involved when using the Town Hall compare to the Soccer Club House.

There will be 150 couples attending the matric farewell and the tickets will cost R250 per couple.

The group investigated the use of the Town Hall gathered the following information:
- The venue cost R2 500 for the evening
- The venue includes rectangular tables of 2m × 1,5m
- Table cloths cost R35 per table
- The tables can seat 8 people each.
- Decorations for the venue costs R225 per table
- Food cost R200 per head

1.1   Calculate the number of tables required.   (2)
1.2   Calculate the cost for the venue, decorations and table cloths.
                                                                          (3)
1.3   Calculate the cost for the food.   (2)
1.4   If the cost of the tickets goes for paying the caterers, how much money needs to be paid by sponsors?   (5)
1.5   How much space will be required for the tables if 1m² must be added to each table to ensure that the people can move between the tables?   (4)

Area of rectangle = Length × Width

1.6   If the dimensions for the Town Hall are 23,5m × 12,3m, calculate the space that will be available after the tables have been arranged.   (3)

1.7   Determine the total cost for using the Town Hall by using the given information.   (3)

The group investigated the use of the *Soccer Club* gathered the following information:
- The venue cost R2 000 for the evening
- The venue includes square tables of 2m × 2m
- Table cloths cost R22.50 per table
- The tables can seat 8 people each.
- Decorations for the venue costs R210 per table
- Food cost R350 per couple

1.8   Determine the difference in the cost for food between the two venues.   (3)

1.9   Determine the total cost when using the *Soccer Club* using the given information.   (5)

1.10 Which venue should be used? Explain.   (2)
                                                                       [32]

QUESTION 2:

A motor dealer did some research on pre-owned delivery vans. His results are given the following table:

Age in years	3	5	7	9	11	13
Selling price in thousand rand	125	102	49	51	50	45

2.1   Calculate the mean selling of the pre-owned delivery vans. (rounded to the nearest whole number)   (2)

2.2   If the motor dealer bought a delivery van for R49 000 and sold it three months late for R53 000, calculate the percentage profit he made on the deal.   (3)
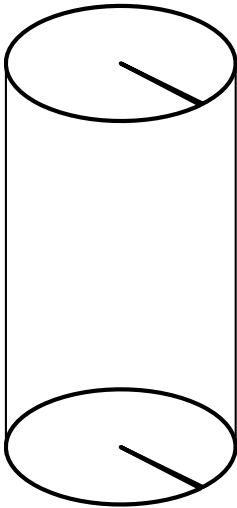
$$\% \text{ Profit} = \frac{\text{Profit}}{\text{Cost Price}} \times 100\%$$

2.3 Insurance on the delivery van is calculated as 15% of the selling price of R102 000. The payments are worked out over a period of 5 years. How much will the payment be if the insurance will be paid monthly? (4)

[9]

Question 3:

A jam tin is 10cm high and has a diameter of 7cm. The metal used to manufacture the jam tins is sold in rolls 1 m wide and 20 m long.

3.1 Calculate the total surface area of the tin.
(correct to nearest whole number) (4)

Total Surface Area = 2πr² + 2πrh

3.2 Draw the net plan that will be used to cut the tins from the metal. Show all the dimensions. (5)

3.3 Work out the area (in cm²) of a metal sheet. (3)

3.4 How many tins can cut from the metal sheet? (2)

3.5 The cost for one sheet of metal is R500. Determine the cost of one tin. (3)

3.6 Determine the capacity of the tin(correct to 2 decimal places) (3)

Volume = $\pi r^2 h$

3.7 After the jam tins are filled they are packed in boxes. Each box has the dimensions 50cm × 50cm × 50cm. Determine how many tins can be packed into the boxes. (3)

[23]

Question 4:

Adam opened a tent repair shop in the local mall. He charges R25 per cm for the labour to repair a tear in a tent, plus R12,00 for the adhesive used.

4.1 Complete the table to show the cost to repair tents.

Length of tear	1cm	2cm	3cm	4cm	5cm	6m
Cost of repair						

(6)

4.2 Write down a formula for the calculations. (2)

4.3 Draw a graph of this function. (3)

4.4 Adam pays R24 to repair any tear. Write down a formula for the cost to repair a tear. (2)

4.5 Add the graph that represents Adam's cost on the graph. (2)

4.6 Find the break even point. (2)

[17]

Question 5:

Mary wants to go on a tour to Cape Town which is 1 245km from her house. She has two options that need to be investigated before she can make a final decision.

Option A:
- Using her own car and drive to Cape Town requires petrol at R14,45 per litre and the petrol consumption of her car is 13km/l.
- The toll fees to Cape Town work out R480.
- Staying in an apartment cost R650 per night.
- Food expenses per day are R115 per day.

Option B:
- Cape Town Tours have a special offer for 7 days that include all the meals, transport and accommodation at a cost of R6 750.
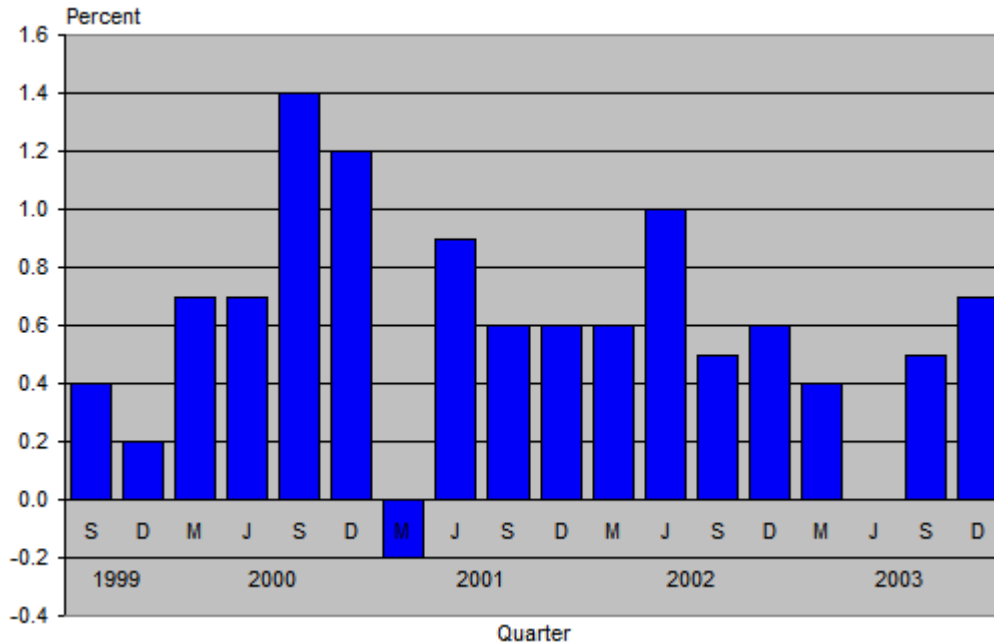
5.1   Work out the total cost for option A for 7 days. All calculations must be rounded to the nearest whole number.   (10)

5.2   Which option will be the cheapest? Explain.   (2)

5.3   If Mary wants to use option A, how can she reduce the expenses?   (2)

5.4   If Mary chooses option B she has to save money for the trip. How much should she save per month if she has 8 months to save for the trip?   (3)

5.5   If Mary receives R12 355 per month, determine the percentage (correct to one decimal place) of her income that needs to be saved for the trip.   (3)

[20]

Question 6:

The graph shows the CPI (consumer price index) for the New Zealand marked for the months September(S), December (D), March (M) and June(J) over a 5 year period.
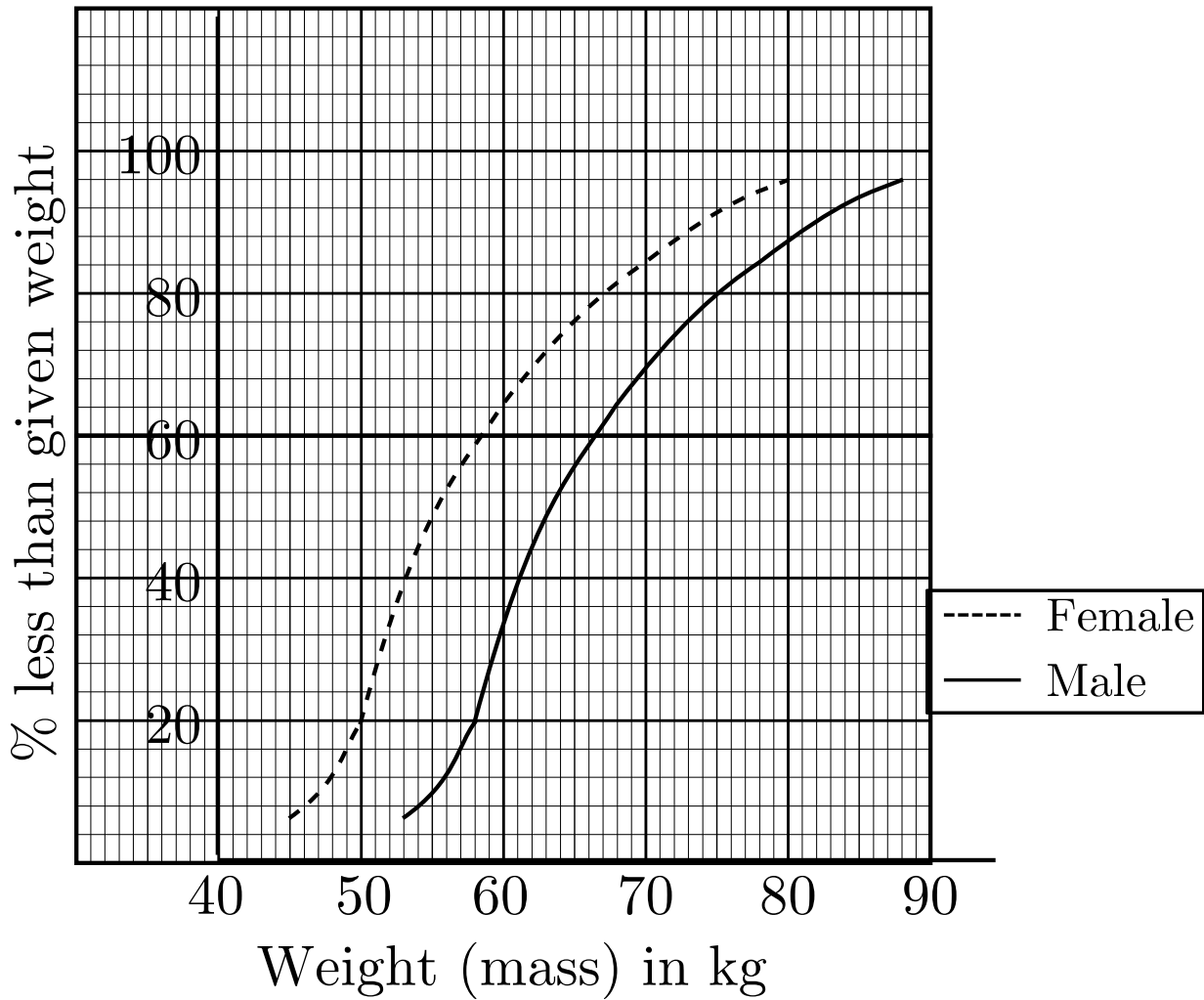

6.1 Define the word inflation. (2)

6.2 When was the inflation 0%? (2)

6.3 When there is a decrease in the inflation rate, does that mean that prices are decreasing? (2)

6.4 Salary increases are linked to inflation. During which year, according to the graph, would the salary increases have been the highest? (2)

6.5 Calculate the average inflation rate (in %) for 2000 to 2003. (4)

6.6 During which year was the inflation the highest? (2)

6.7 When was the inflation the highest? (2)

6.8 In which month and year was the inflation negative? (2)

[18]

Question 7:

The chart shows the standard cumulative percentage frequency distribution for body weight of all 18-year-old males and females.

7.1   Copy the table and then use the chart to read off estimates for the values to complete the table.

% of weight distribution (kg)	Females	Males
5th percentile		
10th percentile		
25th percentile		

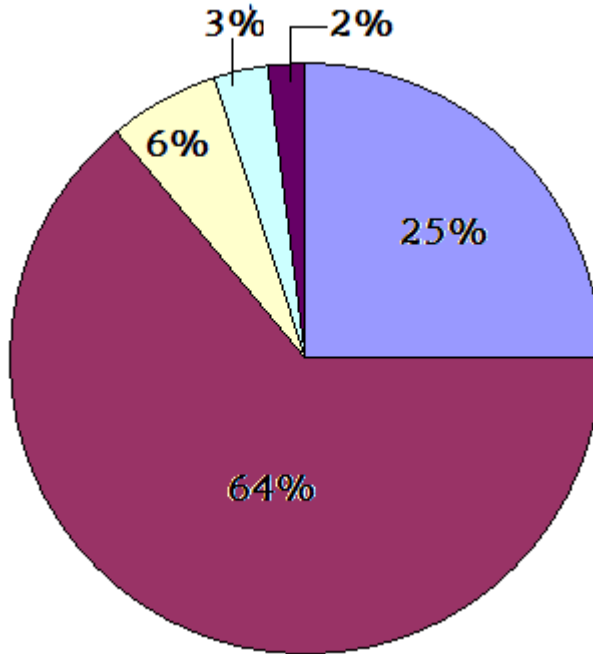| 50th percentile		
75th percentile		
90th percentile		
95th percentile		

(7)

7.2   Write down the median for males and females.   (2)

7.3   How many more kilograms can we expect an average 18-year-old male to weigh than an average 18-year-old female?   (2)

7.4   Will Talita be seen as overweight if she weighs 70kg?   (2)

7.5   What is the percentage of females that weigh less or the same as Talita?   (2)

[15]

Question 8:

When selling a jar of coffee the income is distributed as follows:

2% - Farmer   6% - Shipping company
3% - Exporter   25% - Shop selling coffee
64% - Coffee Company

This information is given in the chart below.

8.1 If you pay R89,99 for a jar coffee, how much of these money goes to each stake holder? (10)

8.2 The shop selling this coffee has a sale and sells the coffee for 30% less. What is the new selling price? (4)

8.3 Will the shop keeper benefit from the sale price? Explain. (2)

[16]

Total: 150