



Province of the
EASTERN CAPE
EDUCATION

**NATIONAL
SENIOR CERTIFICATE**

GRADE 11

NOVEMBER 2012

MATHEMATICAL LITERACY P2

MARKS: 100

TIME: 2½ hours



This question paper consists of 11 pages and 1 page annexure.

INSTRUCTIONS AND INFORMATION

Read the following instructions carefully before answering the questions.

1. This question paper consists of FOUR questions. Answer ALL the questions.
2. QUESTIONS 2.2.2 must be answered on the attached ANNEXURE A. Write your name in the spaces provided and hand in the annexure with the ANSWER BOOK.
3. Number the questions correctly according to the numbering system used in this question paper.
4. An approved calculator (non-programmable and non-graphical) may be used, unless stated otherwise.
5. ALL calculations must be shown clearly.
6. ALL the final answers must be rounded off to TWO decimal places, unless stated otherwise.
7. Start EACH question on a NEW page.
8. Write neatly and legibly.

QUESTION 1

Gretchen has decided to eat healthier by substituting her red meat diet with that of ostrich meat. Ostrich meat is fat-free, low in calories and cholesterol, while being rich in protein.

- 1.1 Gretchen is collecting all the recipes for cooking with ostrich meat. The following is a recipe for **Ostrich Fillet in Naartjie Sauce**.

Serves 4 people

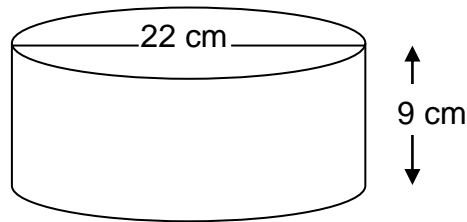
1 *lb* (pound) 2 *oz* (ounce) Ostrich Fillet
 1½ *tsp* beef stock powder
 Juice and grated peel of 1 large orange
 60 *ml* vinegar
 1 *tbsp* honey
 2 *tbsp* olive oil
 1 can naartjies
 Salt and freshly ground pepper to taste

- 1.1.1 While Gretchen is preparing the recipe, the only measuring spoon that she has is a 5 *ml* teaspoon (*tsp*). The recipe requires 2 tablespoons (*tbsp*) of olive oil. How many teaspoons of olive oil will Gretchen use if 1 *tbsp* = 15 *ml*? (3)
- 1.1.2 How many cans of naartjies will be used if Gretchen prepares the recipe for 20 people? (2)
- 1.1.3 According to the recipe Gretchen has to preheat the oven to 400 °F (Fahrenheit). Her stove's temperature is in degrees Celsius (°C) and she sets it to 220 °C. Show by using the formula below whether Gretchen used the correct temperature setting in °C.
- Formula; °F = °C x 1,8 + 32**
- Give your answer to the nearest 10°. (4)
- 1.2 In South Africa meat is sold in kilograms (*kg*). Convert the ostrich fillet needed for the recipe to determine how many kilograms of ostrich fillet Gretchen has to buy. Give your final answer to 1 decimal place.

Use the following information:

1 *lb* = 0,45359 *kg*
 1 *oz* = 0,0625 *lb* (5)

- 1.3 When the dish is completely cooked, it has a capacity of 1,5 *litre*. Gretchen wants to transfer it to a round serving dish as illustrated in the diagram below (not drawn to scale). The diameter of the serving dish is 22 cm and the height is 9 cm.



(5)

Use the following information to determine if the serving dish will be big enough for the cooked meal. Give your final answer to 1 decimal place.

$$\text{Volume} = \pi r^2 h \text{ where } \pi = 3,14$$

$$1\ 000\ \text{cm}^3 = 1\ \ell$$

- 1.4 Gretchen received the following till slip for some of the items she bought for the recipe from SAVE-A-LOT Supermarket.

SAVE-A-LOT Supermarket	
Thank you for shopping with us	
Ostrich fillet 500 g	
@ 67,00/kg	33,50
0,275 kg Oranges	
@ 5,99/kg #	1,65
Naartjies	12,59
Due VAT incl.	52,54
Cash	52,50
Rounding	0,04
Items	3
-----TAX INVOICE-----	
VAT included @ 14%	6,45
Non Taxable Items #	
-----VAT REG NO. 123456789-----	
Please retain slip as your guarantee	
12/09/2011	16:42

- 1.4.1 Determine why Gretchen only paid R33,50 for the ostrich fillet. (1)
- 1.4.2 Show how the Value Added Tax (VAT) of R6,45 was calculated. (3)
- 1.4.3 The naartjies that Gretchen bought was taxed, but not the oranges. Give an explanation why the naartjies was taxed, but not the oranges. (2)

- 1.4.4 Explain what the meaning of rounding R0,04 on the till slip is. (2)
- 1.4.5 Explain why the till slip does not show any change due to Gretchen. (2)
- 1.4.6 What time of the day did Gretchen make the purchase? Give evidence from the till slip to justify your answer. (2)

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QUESTION 2

- 2.1 Mondo is driving a second hand car for the past four years. Over these four years he managed to save 16% as a deposit of the price of the brand new car he wants to buy. He is interested in buying a 2011 Chevrolet Orlando 1,8 model.

Mondo visited the Delta Motor Dealer to purchase the car. The price of the car is R250 000.

For the purpose of this we are going to focus on the price of the car only (no other initial cost).

- 2.1.1 Calculate the amount Mondo saved for the deposit. (2)

- 2.1.2 Mondo managed to get a loan from a bank for the outstanding amount. He will repay the loan over 72 months at 9,5% per annum simple interest. Calculate how much Mondo will pay if it takes him exactly 72 months to repay the loan.

Use the formula: $A = P(1 + ni)$ where;

$A = \text{Final amount}$,

$P = \text{Loan amount}$,

$n = \text{number of years and}$

$i = \text{interest rate}$

(5)

- 2.1.3 How much interest will Mondo pay on the loan? (2)

- 2.2 When a new car is bought, the owner must be aware of the fact that the value of the car depreciates. As soon as you drive your brand new car out of the showroom, it does not have the same value you bought it for.

Mondo learnt that the value of his car depreciates at a rate of 20% per annum. The following table shows the relationship between the value of the car and the number of years.

Table 1

Year	0	1	2	3	4
Value in Rand	250 000	200 000	A	128 000	102 400

- 2.2.1 Calculate the missing value (A) by using the formula; $A = P(1 - i)^n$ where;

$A = \text{Future value}$

$P = \text{Original value}$

$i = \text{interest rate}$

$n = \text{number of years}$

(3)

2.2.2 Use the information in the table to draw a graph (ANNEXURE A) that shows the relationship between the value of the car and the number of years. (5)

2.2.3 What type of proportion is illustrated by the table or graph? Give a reason for your answer. (2)

2.3 In the showroom there were different colours of the Chevrolet Orlando that Mondo wants to buy (2 red, 3 silver, 4 grey and 5 black). What is the probability that Mondo will choose a silver Chevrolet Orlando? (2)
[21]

QUESTION 3

- 3.1 During the first round of the 2011 Rugby World Cup the competing countries played in groups. They played every other team in their group only once. One of the groups (GROUP D) in the table below shows the possible games. The teams in GROUP D were Fiji (F), South Africa (SA), Samoa (S), Wales (W) and Namibia (N). Use the table to answer the questions below.

Table 2

Teams	F	SA	S	W	N
F	FF	FSA	FS	FW	FN
SA	SAF	SASA	SAS	SAW	SAN
S	SF	SSA	SS	SW	SN
W	WF	WSA	WS	WW	WN
N	NF	NSA	NS	NW	NN

- 3.1.1 How many of the matches were not possible? Explain your answer. (2)
- 3.1.2 How many matches did not take place since the teams only played each other once? (2)
- 3.1.3 How many matches did each team play? (2)
- 3.1.4 What is the total number of matches played during this group stage of the Rugby World Cup? (2)
- 3.1.5 What is the probability that a team won at least ONE of their matches? (2)
- 3.1.6 Calculate the probability that a team will win all their matches in the group stage and proceed to the quarter finals. Take into consideration that not one of the matches ended in a draw. (2)
- 3.2 The final score of the match between South Africa and Fiji was 49 – 3 in favour of South Africa. A try is worth 5 points, a conversion 2 points and a penalty 3 points.
- 3.2.1 (a) Write down a formula to show how the final score of a rugby match is calculated. Use (s) for final score, (t) for tries, (c) for conversions and (p) for penalties. (3)
- (b) Use your formula in QUESTION 3.2.1 (a) to show how South Africa's final score was calculated if they scored 6 tries, 5 conversions and 3 penalties. (2)
- 3.2.2 How did Fiji score their points? (1)

3.3 The match between South Africa and Fiji was played at Wellington Regional Stadium in Wellington City, New Zealand. The ticket prices for this stadium for this specific match are listed in the table below in New Zealand Dollar (NZD).

Table 3

Category A	Category B	Category C	Category D
153 NZD	123 NZD	97 NZD	66 NZD

3.3.1 Trevor, a South African citizen, bought a Category B ticket via the internet. When the ticket was bought the exchange rate was 1 ZAR (South African Rand) = 0,15761 NZD.

Calculate how much he paid for this ticket in Rand (ZAR). (3)

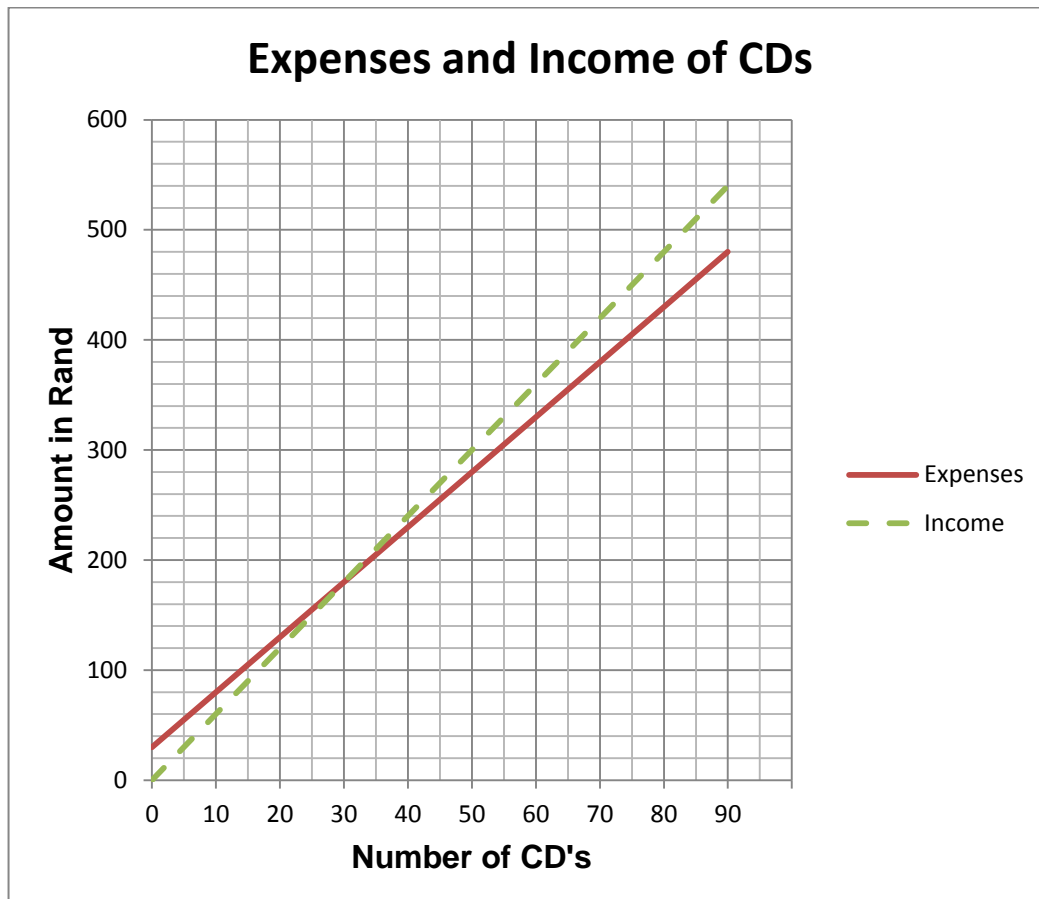
3.3.2 When Trevor came back from New Zealand, he still had 200 NZD left and exchanges it to Rand (ZAR). The exchange rate at the time of exchanging was 1 NZD = R6,3450 (ZAR). What was the value of 200 NZD in Rand (ZAR)? (2)

[23]

QUESTION 4

- 4.1 Shameeg, a Grade 11 learner, decided to sell Compact Discs (CDs). He wants to use the profit that he makes to fund his matric farewell costs. He bought CDs with R500 he received for his birthday. Take into consideration that Shameeg spends R30 towards transport costs.

The following graph shows his expenses and income for the CDs.



- 4.1.1 Calculate the cost of one CD. (2)
- 4.1.2 Calculate the selling price of one CD. (2)
- 4.1.3 With reference to your answers in QUESTIONS 4.1.1 and 4.1.2, calculate the percentage profit he makes on one CD. Use the formula:

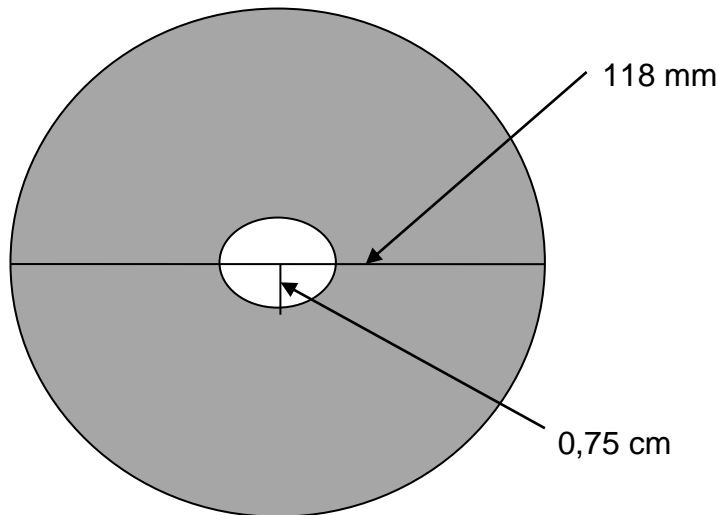
$$\text{Percentage profit} = \frac{(\text{Income} - \text{Expenses}) \times 100}{\text{Expenses}}$$
 (2)
- 4.1.4 Give the coordinates of the point where the two graphs intersect. (2)
- 4.1.5 Give a name for the point where the two graphs intersect and explain what is meant by this intersection. (2)
- 4.1.6 Explain what can be noticed before the point that you have mentioned in QUESTION 4.1.5. Your explanation must refer to income and expenses. (2)

- 4.1.7 The graph for expenses does not start at the origin (0;0). Explain why the graph does not start at the origin. (2)
- 4.2 Shameeg used the data of his sales for the month and drew the five-number summary below to analyse his sales of CDs during one month. Use this five-number summary to answer the questions below.

Table 4

Minimum	5
Quartile 1	15
Quartile 2	24
Quartile 3	37
Maximum	42

- 4.2.1 What can we deduce from the first quartile (15) on the sales of the CDs? (2)
- 4.2.2 What can be deduced from the third quartile (37) on the sales of the number of CDs? (2)
- 4.2.3 Would you say Shameeg had a good month with the sales of the number of CDs? Explain your answer. (2)
- 4.3 The following is a drawing of a CD (not drawn to scale).



Shameeg read an article which stated that the area of a CD is $107,53 \text{ cm}^2$. Use the diagram above where the diameter of outer circle is 118 mm and the radius of the inner circle 0,75 cm to help Shameeg to see if the statement is correct. Use the formula; $A = \pi r^2$ where $\pi = 3,14$. Give you final answer in cm^2 .

(5)
[25]

TOTAL: 100

ANNEXURE A

QUESTION 2.2.2

NAME: _____

