basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

NATIONAL
SENIOR CERTIFICATE

GRADE 11

MATHEMATICAL LITERACY P1

EXEMPLAR 2013

MARKS: 100

TIME: 2 hours

This question paper consists of 9 pages and 1 annexure.

INSTRUCTIONS AND INFORMATION

1.   This question paper consists of FIVE questions. Answer ALL the questions.

2.   Answer QUESTION 5.1.4 on the attached ANNEXURE. Write your name and class in the spaces on the ANNEXURE and hand in the ANNEXURE with your ANSWER BOOK.

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

4.   Start EACH question on a NEW page.

5.   You may use an approved calculator (non-programmable and non-graphical) unless stated otherwise.

6.   Show ALL the calculations clearly.

7.   Round off ALL the final answers to TWO decimal places, unless stated otherwise.

8.   Indicate units of measurement, where applicable.

9.   Maps and diagrams are NOT necessarily drawn to scale, unless stated otherwise.

10.   Write neatly and legibly.

QUESTION 1

1.1   1.1.1   Without rounding off, convert 2,35 ℓ to mℓ.   (1)

       1.1.2   A 3 kg pocket of onions costs R19,99.

                Calculate the costs of onions per kg.   (2)

1.2

> Spark's Butchery is a popular butchery in Karkloof. The butchery supplies meat to other butcheries in Howick and Pietermaritzburg.
>
> Spark's Butchery asks the following prices for some of their products:
>
> | Product | Cost price per kg | Selling price per kg |
> |---------|-------------------|----------------------|
> | Lamb chops | R54,00 | R85,00 |
> | Fillet steak | R76,00 | **A** |
> | Spare ribs | R43,00 | R53,75 |
>
> **NOTE:** Prices include 14% VAT.
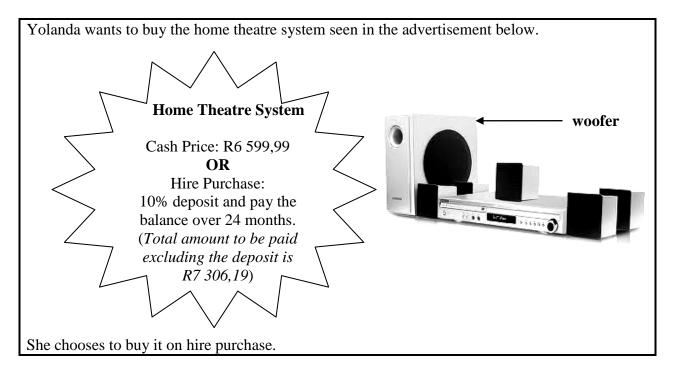
       1.2.1   Calculate the percentage mark-up that Spark's Butchery will have on spare ribs.

                Use the formula:

                $$\text{Percentage mark-up} = \frac{\text{Selling Price} - \text{Cost Price}}{\text{Cost Price}} \times 100\%$$ (3)

       1.2.2   Calculate how many kilograms of lamb chops Spark's Butchery could buy for R2 000.   (2)

       1.2.3   Determine the value of **A**, the selling price of the fillet steak, if it has a mark-up of 30%.   (3)

       1.2.4   A customer buys 1,2 kg of spare ribs and 0,5 kg of lamb chops. Calculate the total amount paid by the customer.   (4)

       1.2.5   Calculate the profit on the sale of 50 kg of spare ribs.   (4)

                                                                                    [19]

QUESTION 2

Yolanda wants to buy the home theatre system seen in the advertisement below.

Home Theatre System

Cash Price: R6 599,99
OR
Hire Purchase:
10% deposit and pay the balance over 24 months.
(*Total amount to be paid excluding the deposit is R7 306,19*)

woofer

She chooses to buy it on hire purchase.

2.1   Calculate the deposit paid in rand.   (2)

2.2   Show, through calculation, that the total amount to be paid, excluding the deposit, is R7 306,19 if the store charges simple interest at a rate of 11,5% per annum on the balance after the deposit has been received.   (4)

2.3   Calculate the amount Yolanda must pay each month (the monthly instalment).   (2)

2.4   The home theatre's woofer has a length of 8 inches, a height of 12 inches and a width of 6 inches.

        If **1 inch = 2,54 cm**, determine the height of the woofer in centimetres.   (2)

2.5   Yolanda budgets an amount of R300 per month for the purchase of CDs and DVDs to play on the system.

        2.5.1   Calculate how much Yolanda will spend on the purchase of CDs and DVDs per year.   (2)
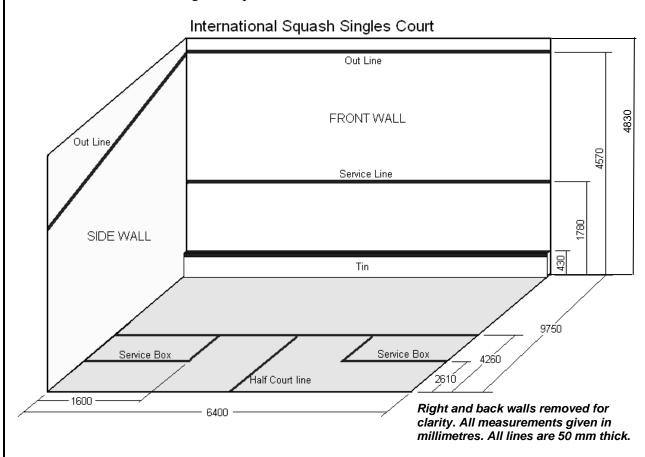
        2.5.2   She buys CDs at an average of R120 per month and DVDs at an average of R150 per month and uses the rest of her budget to buy other accessories.

                  Calculate how much she will have left per month to buy other accessories.   (3)

                                                                                                                          [15]

QUESTION 3

3.1 Ms Senokoane is a squash coach at Katlego High School. She needs to repaint the walls of the squash court as well as renew the lines marking the various regions of the court.

Below is a 3-D scale drawing of a squash court.

International Squash Singles Court

Right and back walls removed for clarity. All measurements given in millimetres. All lines are 50 mm thick.

Use the information in the diagram above and answer the questions that follow.

3.1.1 Write down the height of the tin section in cm. (2)

3.1.2 Calculate the distance, in mm, from the service line to the out line against the front wall. (2)

3.1.3 Calculate the area, in mm², of the service box.

Use the formula: **Area = length × breadth** (3)

3.1.4 The front wall and the two identical side walls are to be painted white, with the exception of the tin section, which is to be painted black.

Calculate the area, in m², that must be painted white.

Use the following formula:

Area to be painted = $k(2p + b) - b \times t$, where

k = height of the squash court, including out line section
p = length of the squash court
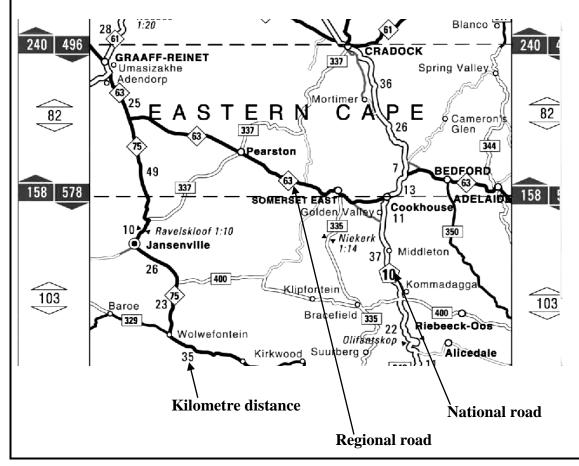b = breadth of the squash court
t = height of the tin section   (6)

3.2 The type of paint to be used is such that 1 litre of paint covers 8 m².
The white paint is sold in 5 litre containers.

3.2.1 Determine, to the nearest litre, the amount of white paint required to paint the walls, excluding the tin section.   (3)

3.2.2 Calculate the cost of the white paint if one 5 litre container of paint costs R215,85.   (4)

[20]

QUESTION 4

Clyde lives in Graaff-Reinet. He regularly travels to Adelaide to visit his parents. He also has family that live in Jansenville. The map indicates the names of regional roads in rhombuses and main roads in rectangles. National roads are indicated in a pentagon. The actual kilometre distance between sections of the road is also indicated on the map.

Kilometre distance

National road

Regional road

4.1   Use the map above and answer the questions that follow.

    4.1.1   Name the regional road Clyde would use to travel from Graaff-Reinet to Adelaide. (2)

    4.1.2   Name THREE towns and/or cities that Clyde would pass on his way to Adelaide. (3)

    4.1.3   Calculate the actual distance between Graaff-Reinet and Jansenville. (3)

    4.1.4   In which general direction is Pearston from Jansenville? (2)

4.2   A distance between two points on the map is 3 cm. The actual (real-life) kilometre distance between the two points is 15 km. Determine the scale used on the map in the form 1 : …… (4)

[14]

QUESTION 5

5.1 Mr Shibambo is the Grade 11 grade head at his school. The school hosts an annual Grade 11 dance. Learners choose the dress code for the event. Mr Shibambo conducts a survey to confirm the dress code for the 2013 event. The results are recorded in the frequency table below.

TABLE 1

DRESS CODE	BOYS	GIRLS
FORMAL	20	40
TRADITIONAL DRESS	5	15
FANCY DRESS	5	5
CASUAL WEAR	30	10

5.1.1 Calculate the total number of learners who responded to the survey. (2)

5.1.2 Calculate the percentage of the learners who preferred CASUAL wear as the dress code for the Grade 11 dance. (3)

5.1.3 Which dress code is the least preferred by the Grade 11 learners? (2)

5.1.4 Use the data in TABLE 1 above to draw a compound bar graph on ANNEXURE A. (7)

5.1.5 If a Grade 11 learner is chosen at random from the group that was interviewed, what is the probability that the learner:

  (a) Preferred formal wear (2)

  (b) Did not prefer fancy dress (2)

5.2   Mr Shibambo recorded the test results for his Grade 11 Mathematical Literacy class in terms of gender.

The results are listed below.

Boys' scores

48	56	57	58	65	66	66
68	75	77	78	81	85	96

Girls' scores

58	75	49	79	39	99	56
67	98	89	59	75	75	

5.2.1   Arrange the girls' scores in ascending order.   (1)

5.2.2   Write down the girls' modal score.   (2)

5.2.3   Calculate the boys' mean score.   (3)

5.2.4   Calculate the boys' median score.   (2)

5.2.5   Determine the range of the girls' scores.   (2)

5.2.6   Write down the probability that a girl chosen at random scored 75 for the test.   (2)

5.2.7   Write down the probability that a boy chosen at random scored more than 75 for the test.   (2)

[32]

TOTAL: 100

NAME: _____   **CLASS:** _____

ANNEXUE A

QUESTION 5.1.4

DRESS CODE FOR THE DANCE

Number of learners	
45	
40	
35	
30	
25	
20	
15	
10	
5	
0	FORMAL TRADITIONAL DRESS FANCY DRESS CASUAL WEAR

Dress code