Province of the
EASTERN CAPE
EDUCATION

NATIONAL SENIOR CERTIFICATE

GRADE 11

NOVEMBER 2014

MATHEMATICAL LITERACY P1

MARKS: **100**

TIME: **2 hours**

IMLIT1

This question paper consists of 14 pages.

INSTRUCTIONS AND INFORMATION

1. This paper consists of FIVE questions. Answer ALL the questions. QUESTION 5.1.3 must be answered on the ANSWER SHEET provided.

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

3. A non- programmable and non-graphical calculator may be used, unless stated otherwise.

4. ALL calculations and steps must be shown clearly.

5. Units of measurement must be indicated where applicable.

6. Start EACH question on a NEW page.

7. Write neatly and legibly.

8. Round off ALL FINAL answers to the appropriate form of rounding and/or number of decimal places for a given context.

QUESTION 1

1.1 Johnson worked in London for thirteen years and came back during the December holidays in 2013 to South Africa. Johnson wanted to start a garden service business in March 2014. He would employ two men to assist him. On **ANNEXURE A** find the quotation he obtained from Rio Hardware Store to answer the questions below:

1.1.1 Calculate his total cost, A, excluding VAT that he will pay for the equipment. (3)

1.1.2 The high density (H/D) plastic refuse bags are sold in rolls of 20 bags per roll. Determine the price of ONE plastic refuse bag. (2)

1.1.3 Write down the month in which Johnson requested the quotation. (2)

1.1.4 Write down the VAT number that Johnson has been issued by SARS (South African Revenue Service). (2)

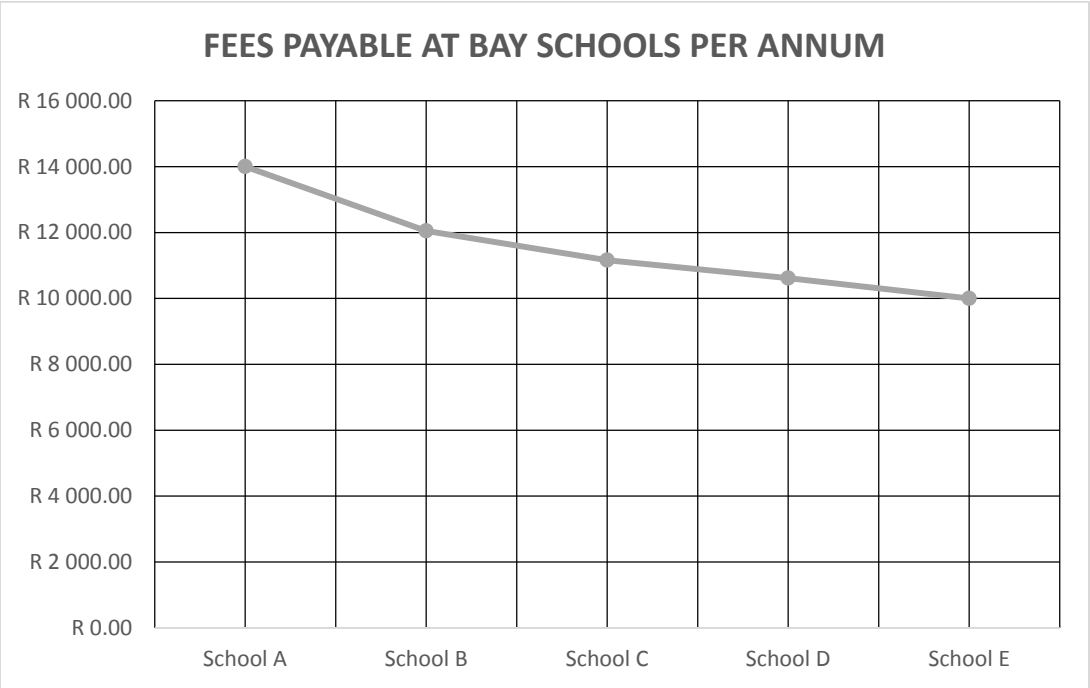
1.1.5 Determine what the item is that has an SKU number of RBC-5622. (2)

1.1.6 Write down the quotation number Johnson will have to use if he decides to buy the equipment. (2)

1.1.7 The two stroke oil is sold in bottles of 200 mℓ. Convert this volume to litres. (2)

1.1.8 Determine the number of months that Johnson spent in London. (2)

1.2 Johnson investigated the school fees charged by different primary schools in order to choose the best school for his child. The graph below indicates the annual fees charged by schools in his area.



1.2.1 Identify the school with the lowest school fees. (2)

1.2.2 Calculate the difference in the amount of fees between School A and School B. (2)

[21]

QUESTION 2

2.1 Johnson had to buy a bakkie in order to do his business. He bought his bakkie for R192 600, 00 including Value Added Tax (VAT) at Sonny's Motors. (VAT = 14%)

2.1.1 Calculate the price of this bakkie excluding VAT. (3)

2.1.2 Johnson paid R478,20 for 36 litres of petrol for his bakkie. Calculate the price of petrol per litre. (2)

2.2 The following is a summary of Johnson's first month's income and expenses:

TABLE 1: Income and Expenses for Johnson's first month

INCOME: R7 200,00	**EXPENSES**
	Salaries: R2 700,00
	Petrol: R 610,20
	Oil: R 28,94
	TOTAL: R3 339,14

2.2.1 Show by calculations that Johnson's profit of his business is R3 860,86. You may use the following formula:

Profit = Income – Expenses (2)

2.2.2 Calculate how much an assistant who earns R350,00 a week contributes towards the Unemployment Insurance Fund monthly if 1% is deducted from his salary. (3)

2.2.3 He increased the price of cutting grass per month from R360,00 to R380,00. Calculate the percentage increase. You may use the following formula:

$$\textbf{\% increase} = \frac{\textbf{new price per cut} - \textbf{old price per cut}}{\textbf{old price per cut}} \times \textbf{100}$$ (3)

2.3 Luntu has a gold credit card which he used to pay for entertainment during the December 2013 holidays. His total debt amounted to R4 529,96. The bank charges him an interest rate of 27% per annum as well as a monthly subscription fee of R21,00.

2.3.1 Calculate the daily interest rate charged by the bank. (3)

2.3.2 Calculate the instalment due on his card for January 2014 by using the following formula:

$$\textbf{Instalment due} = \frac{\textbf{amount owed x 127\%}}{\textbf{12}} \textbf{ + subscription fee}$$ (3)

2.3.3 The cost of a flight back from London to Johannesburg was £379,83. The cost for his flight was charged to his credit card and on the statement an amount of R6 879,00 was charged. Determine the exchange rate that was applicable on the date his flight was booked. (3)

[22]

QUESTION 3

3.1 Nadia High School approached The Winch Company to sponsor them with the material to fence and plant grass on their sports field and also paint the inside walls of a classroom. The inside walls of a classroom are 6,2 m by 5,1 m and 3 m high. The caretaker indicates that he will need the following material for the work:

Fencing poles, fencing wire, cement and stone, paint and grass seed.

3.1.1 To determine how much grass seed they will need the caretaker measure the length and breadth of the area of the sports field. He measured the length to be 162 m and the breadth 160 m. Calculate the area where the grass will be planted.
You may use the following formula:

Area of a rectangle = length x breadth (2)

3.1.2 Calculate the perimeter of the sports field in metres.
You may use the following formula:

Perimeter = 2 (length + breadth) (2)

3.1.3 Determine the number of holes the men will dig on the length sides only if there is one hole in every 2 m. There is a gate of 4 m that will be attached to two poles.

You may use the formula:

$$\textbf{No. of holes} = \frac{\textbf{sum of length sides}}{\textbf{2}} \textbf{ – 1}$$ (3)

3.1.4 Calculate the surface area of the classroom that has to be painted. The area of the door is 1,71 m^2 and the area for the windows is 4,875 m^2.
You may use the following formula:

Surface area of classroom = 2(length x height) + 2(breadth x height) – (area of windows and door) (3)

3.1.5 The paint they chose indicates a spread rate of 6 m^2 for every 1 litre of paint. The paint is sold in tins of 5 litres only. Calculate how many tins of 5 litres of paint they will need to buy. (3)

3.2 Rondo, a 15-year-old boy from Nadia High School uses the bathroom scale as shown below to measure his mass in kilograms.

3.2 Determine Rondo's Body Mass Index (BMI) if he is 1 832 mm tall.
Use the formula:

$$\textbf{BMI} = \frac{\textbf{mass in kg}}{\textbf{height in metres}^2}$$

(4)
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QUESTION 4

4.1 On **ANNEXURE B** is the map of an extract of the eastern part of South Africa. Use this map to answer the following questions.

4.1.1 Write down the grid reference for Richards Bay. (2)

4.1.2 Identify the ocean that can be seen on the map. (2)

4.1.3 Two neighbouring countries can be found north of Kwazulu-Natal. Write down the name of these countries. (2)

4.1.4 The distance, on the map, between Ladysmith (A2) and KwaDukuza (B2) is 6,5 cm. Use the map scale and calculate the actual distance (in kilometres) between these two towns. (3)

4.1.5 Draw the route from Phinda (C3) to Big Bend (B3). Indicate the towns on the route. (3)

4.1.6 Determine which province represents the largest portion of the map. (2)

4.1.7 Identify the two places south of Mount Ayliff on the map that you will pass before getting to Mount Ayliff (A1). (2)

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QUESTION 5

The maternity sections of South African hospitals were a hive of activity with a total of 320 babies delivered on New Year's Day. (01/01/2014 at 19:30 SABC1 TV news). The data has been recorded in the table below:

TABLE 2: Table representing babies born on 1 January 2014

Provinces	Eastern Cape	Limpopo	Mpumalanga	Northern Cape	Western Cape	Gauteng	Kwazulu-Natal
No. of new-born babies	43	105	25	18	36	60	33

5.1 5.1.1 Identify the province with the highest number of new-born babies on 1 January 2014. (2)

5.1.2 Express the number of babies born in Gauteng as a ratio to the total number of babies born on New Year's Day. Write the ratio in its simplest form. (4)

5.1.3 Complete the bar graph on the ANSWER SHEET using the above information for the missing provinces. (4)

5.2 In April 2012 the Department of Transport implemented e-tolls on some of Gauteng's major highways. The following is the fees charged by some of the gantries for Class A2 vehicles when passing underneath them. Use TABLE 3 below to answer the questions below:

TABLE 3: Table depicting e-toll fees for some gantries in Gauteng.

Plaza Name and Place	**Tariff for registered e-tag user Class A2**	**Tariff for a non-registered user Class A2**
Babet (N1-21)	R3,00	R5,80
Indlazi (N1-21)	R2,91	R5,63
Flamango (N1-21)	R2,76	R5,34
Mossie (N1-21)	R3,00	R5,80
Tarentaal (N1-20)	R2,58	R4,99
Owl (N1-20)	R3,21	R6,21
Stork (N1-20)	R2,52	R4,87
Kiewiet (N3-12)	R2,31	R4,47
Sunbird (N1-20)	R3,36	R6,50
Pelican (N1-20)	R3,21	R6,21
Starling (N3-12)	R2,46	R4,76
Phakwe (N12-18)	R2,22	R4,29
Thaha (N12-18)	R3,15	R6,09
Hadeda (R21-1)	R2,43	R4,70
Gull (N12-19)	R3,30	R6,38
Bee-eater (N12-19)	R2,43	R4,70
Ihobe (N1-21)	R3,36	R6,50
Blouvalk (N1-20)	R2,58	R4,99
Leeba (N3-12)	R2,16	R4,18
Ivusi (N1-21)	R3,36	R6,50

[Source: *Government Gazette Volume 562*; Pretoria, 13 April 2012; Issue No. 35263]

5.2.1 Calculate the mean tariff for non-registered e-tag user Class A2. (3)

5.2.2 Determine the median tariff for registered e-tag user Class A2. (3)

5.2.3 Determine the modal (mode) tariff for non-registered e-tag user Class A2. (2)

5.2.4 Determine the probability that a registered tariff amount that is randomly selected will be R3,21. Write your answer in its simplified form. (2)

5.2.5 Determine the range for registered e-tag user tariff amounts. (2)

5.2.6 Identify the tariff amount charged for motorbikes. Use **ANNEXURE C**. (2)

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TOTAL: 100

ANNEXURE A

QUESTION 1.1

QUOTATION

RIO HARDWARE STORES

CUSTOMER INFORMATION:
Name: Johnson Louw
Industrial Contractors
Missionville
Jacksonville
1112

23 Mara Street
Collondale
Jacksonville
1112
Reg No.: 2001/023115/10
VAT No.: 8754896368
Tel No.: (043) 741 2020
Fax No.: (043) 741 6665
E-mail: Info@riohardware.co.za

Valid until ……..……

Quotation No.: Q000002158
DATE: 28/12/2013

SKU	Description	Quantity	Unit Price excluding VAT	Total excluding VAT
FG00012	Rake double sided	3	R 70,17	R 210,51
RBC-5622	Brush cutter Ryobi 43cc	2	R2 367,54	R4 735,08
GRD1234	Bag refuse plastic H/D 20*	3	R 28,06	R 84,18
HGF3457	Oil L/Star two stroke 200 mℓ	1	R 28,94	R 28,94
	TOTAL NET VALUE			**A**
	VAT INCLUDED IN QUOTE			**R 708,22**

Thank you for your enquiry.
Please note that prices are subject to change and availability and may change without notice.
Delivery is excluded.
Standard terms and conditions apply.
BANKING DETAILS:
LLT Bank
Current Account number 7501213633
Branch code: 217-213

ANNEXURE B: MAP OF … PROVINCE IN SOUTH AFRICA

ANNEXURE C

Image of an e-toll gantry on the N1 freeway in Gauteng

Information of the different e-toll tariffs

Image of an e-tag

- A gantry is a metal frame that is fitted with cameras that record the cars that pass under it.
- An e-tag is a device that is fitted to your vehicle and it is electronically recording all the gantries that you pass under. The cost is then charged to your bank account linked to that device.

ANSWER SHEET

NAME: _____ **GRADE:** _____

QUESTION 5.1.3

Provinces	Eastern Cape	Limpopo	Mpumalanga	Northern Cape	Western Cape	Gauteng	Kwazulu-Natal
No. of new-born babies	43	105	25	18	36	60	33