Province of the
EASTERN CAPE
EDUCATION

**NATIONAL
SENIOR CERTIFICATE**

GRADE 10

NOVEMBER 2020

MATHEMATICAL LITERACY P1
(EXEMPLAR)

MARKS: 75

TIME: 1½ hours

INSTRUCTIONS AND INFORMATION

1. This question paper consists of FIVE questions.

2. Answer ALL the questions.

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

4. Diagrams are NOT necessarily drawn to scale.

5. Round off ALL the final answers appropriately, according to the context used, unless stated otherwise.

6. Indicate units of measurement, where applicable.

7. Start EACH question on a NEW page.

8. Show ALL calculations clearly.

9. You may use an approved calculator (non-programmable and non-graphical), unless stated otherwise.
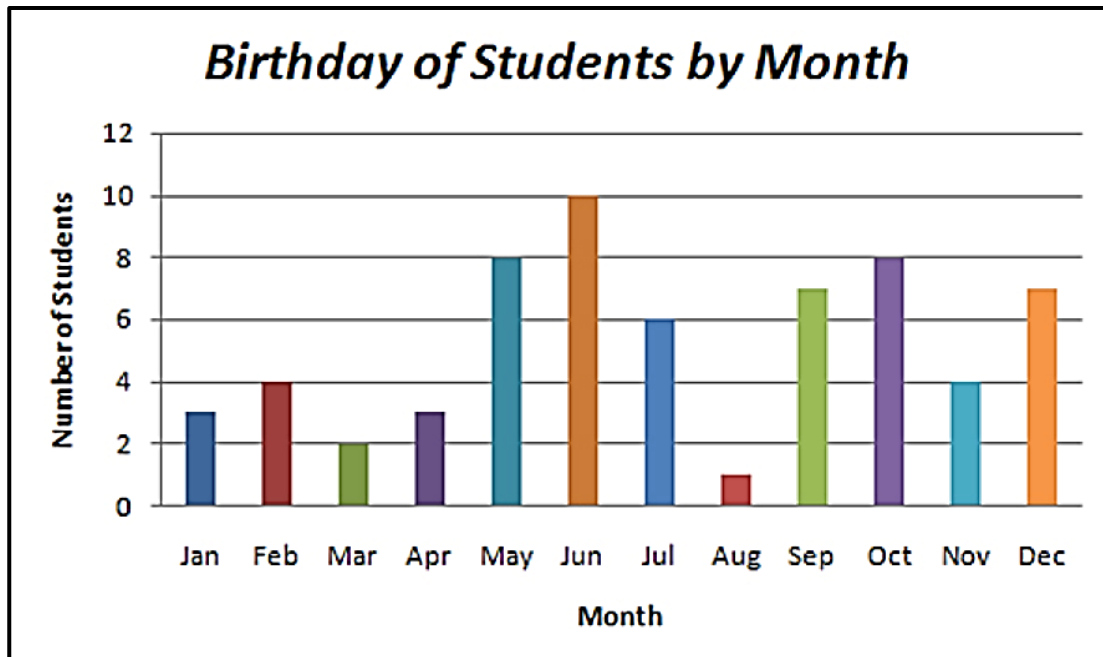
10. Write neatly and legibly.

QUESTION 1

Mrs Afrika is a Grade 10 teacher. She decided to have one big party to celebrate all the learners in her register class's birthdays. Given below is the till slip she received after doing some of the shopping for the party. Study the till slip and answer the questions that follow.

Pickn Pay

Cashier: Olwethu

HAMBURGER BUNS (6 each)
      8 @ 10.99   (**1.2**)
FRUIT JELLYBEANS
      5 @ 25.00   125.00
MAYNARDS WINE GUM ROLL
     20 @   7.99   159.80
TOMATOES 1KG   17.99 #
SIMBA CHIPS
    10 @ 15.00   150.00
CRISP LETTUCE
     4 @ 12.99   51.96 #
LARGE CARRIER BAG
     3 @   0.50   1.50
DAIRY MILK OREO SLAB 120 g
    10   @ 25.99   259.90
COKE LIGHT 2L
    10 @ 16.49   164.90

       DUE VAT INCL   1 018.97
---------------------**TENDER**-------------------------
      MASTERCARD   1 018.97
         6423222
       TOTAL ITEMS: 71
---------------------**TAX INVOICE**-------------------
       TAXABLE VAL   VAT VAL
VAT INCL   1 018.97   123.79
ZERO-RATED   69.95
---------------VAT REG NO. 4090105588---------
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*16364 3305 103923 7   24.02.2020 18:54

1.1   What is the meaning of the hashtag symbol (#) that is found next to certain prices?   (2)

1.2   Calculate the total cost of the hamburger buns.   (2)

1.3   Write the cost of one bag of jellybeans as a ratio to the cost of one bag of chips. Give your answer as a simplified ratio.   (2)

1.4   Show how the VAT amount of R123,79 has been calculated.   (3)

1.5   Mrs Afrika decided to display the birthdays of every child that she teaches in a graph. Study the graph given below and answer the questions that follow.

Birthday of Students by Month

1.5.1   Name the type of graph that Mrs Afrika used.   (2)

1.5.2   How many learners does Mrs Afrika teach in total?   (2)

1.5.3   Write down the month(s) in which the second-most birthdays are celebrated.   (2)
                                                                                       [15]

QUESTION 2

Mr and Mrs Mbele decide that they are spending too much money. They looked at their expenditure for the month of May, including items that are quoted for a year, but must be paid monthly. Given below in TABLE 1 are their findings.

TABLE 1: MR AND MRS MBELE'S EXPENDITURE FOR MAY

Bond repayment on house	R5 000 per month
Water and electricity	R1 000 per month
School fees for 2 children	R1 200 per annum (each)
Clothing accounts	R 560 per month
Insurance	R1 000 per month
Retirement policy	R 100 per month
Church contributions	R 500 per month
Bank charges	R 160 per month
Entertainment and eating out	R1 000 per month
Gym membership	R 279 per month
Petrol	R3 500 per month
Food	R3 000 per month
Cellphones	R1 200 per month
DSTV	R5 200 per annum

2.1 Calculate the monthly payment on the items that are quoted per year. (3)

2.2 How much did the Mbeles spend in May? (2)

2.3 Mr and Mrs Mbele together earn R17 000 per month. How much did they overspend in May? (2)

2.4 Mr Mbele is a very good watch salesman. For every two watches that his colleague David sold, Mr Mbele sold five watches. If their total watch sales were 840, calculate the number of watches sold by Mr Mbele. (3)

2.5 Given below in TABLE 2 are the coastal and inland petrol prices in South Africa for June 2020. Study the table and answer the questions that follow.

TABLE 2: JUNE COASTAL AND INLAND PETROL PRICES

June 2020 petrol and diesel prices for inland and coastal areas		
	Inland	**Coastal**
Petrol	R13,48/ℓ	R12,72/ℓ
Diesel	R11,28/ℓ	R10,68/ℓ

2.5.1 If the Mbeles live in East London, how much would they pay per litre for diesel? (2)

2.5.2 If they spent R3 500 on diesel, determine how many litres of diesel they used this month. (2)

2.6   The Mbeles need to reduce their expenditure. Suggest TWO ways in which they can achieve this. Explain your answers.   (4)

2.7   Mr Mbele decides to sell one of his cars and wants to buy a motorbike in order to save money.

     2.7.1   He bought his car for R98 000 and sells it for R55 000. Calculate Mr Mbele's percentage loss.   (3)

     2.7.2   Mr Mbele buys a second-hand motorbike for R32 500 and decides to invest the remainder of the money in order to surprise his family with a boat cruise in 1,5 years' time.

          The investment earns 1,75% simple interest per month and he invests it for 1,5 years. If the boat cruise costs R45 000 for the entire family, will Mr Mbele have enough money after 1,5 years?   (5)

                                                                 [26]

         Please turn over

QUESTION 3

Zanele has been collecting data about the students in her school who are under the age of 18 years and who drink alcohol.

TABLE 3 is a tally table containing the data that she collected from her classmates.

TABLE 3: TALLY TABLE SHOWING DATA OF UNDERAGE DRINKING

Grade	Number of students surveyed in each grade	Boys under the age of 18 years who drink alcohol	Girls under the age of 18 years who drink alcohol
8	50	ЖЖ IIII	III
9	50	ЖЖ ЖЖ IIII	IIII
10	50	ЖЖ ЖЖ IIII	ЖЖ ЖЖ II
11	50	ЖЖ ЖЖ ЖЖ IIII	ЖЖ ЖЖ ЖЖ ЖЖ
12	50	ЖЖ ЖЖ ЖЖ ЖЖ IIII	ЖЖ ЖЖ ЖЖ ЖЖ IIII

SUMMARY OF RESULTS		
Total students surveyed	Total underage boys	Total underage girls
250	80	63

3.1   How many boys in Grade 10, who are under the age of 18 years, drink alcohol?   (2)

3.2   In which grade does underage drinking occur the most?   (2)

3.3   How many students surveyed in Grade 8 do not drink alcohol?   (3)

3.4   According to Aware.org, 50% of all teenagers in South Africa drink alcohol on a regular basis.

       Compare this figure to the results of Zanele's survey and make a deduction about whether you think there is a problem with underage drinking at her school.   (2)

                                                                  [9]

QUESTION 4

Some of the boys in Kelly's class have been bragging that boys are naturally fitter than girls. Kelly decided to conduct an experiment to test the boys claim.

She divided girls and boys into two separate groups, and made each group do a series of push-ups, sit-ups and short sprints. She then allowed them to rest for two minutes, before taking a reading of their heart rate.

The lower the person's heart rate after the two-minute rest, the fitter that person is.

TABLE 4 below contains the heart rate readings that Kelly collected from the two groups.

TABLE 4: HEART RATE READINGS OF GIRLS AND BOYS

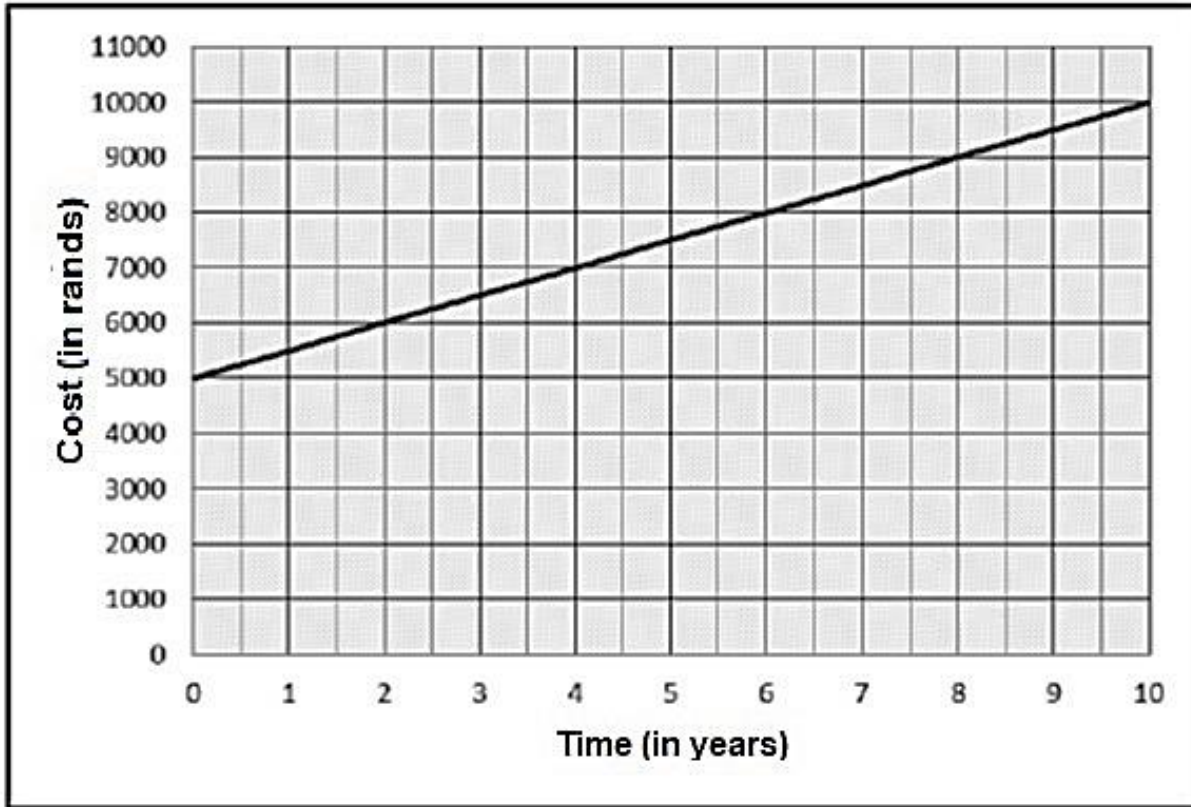| GROUP 1: GIRLS		GROUP 2: BOYS	
Name	**Heart rate reading (beats per minute – bpm)**	**Name**	**Heart rate reading (beats per minute – bpm)**
Ayanda	91	Milo	52
Camilla	96	Bobby	118
Claire	77	Xolani	50
Luna	77	Joe	84
Siphokazi	71	Phillip	105
Megan	72	Simon	90
Jane	69	Shaun	71
Susan	83	Tsepiso	77
Anda	97	Alfred	101
Cleo	67	Daniel	84
Jen	99	Luke	51
Karen	60	Eric	60
Sethu	66		
Hope	70		
Bella	100		

4.1   Write down the name and heart rate of the fittest person in the class.   (2)

4.2   Determine the modal heart rate for the class.   (2)

4.3   Calculate the mean heart rate for the girls (Group 1).   (3)

4.4   Calculate the median heart rate for the boys (Group 2).   (3)

4.5   By looking at the collected data, decide which average, the mean or the median, gives the best indication of which group has the best overall fitness.
Explain your answer.   (2)

4.6   Were the boys correct in claiming that they are fitter than girls?
Explain your answer.   (2)

[14]

QUESTION 5

The graph given below shows the amount of money accumulated when a certain amount of money is invested over a period of time.

5.1   Name the independent variable.   (2)

5.2   Name the type of interest that is illustrated in this graph.   (2)

5.3   Explain why the graph is a straight line.   (2)

5.4   After how many years is the investment worth double the original value?   (2)

5.5   Use the graph to calculate the interest rate per annum.   (3)

    [11]

    TOTAL: 75