**NATIONAL
SENIOR CERTIFICATE**

GRADE 11

NOVEMBER 2014

MATHEMATICAL LITERACY P2

MARKS: 100

TIME: 2 hours

IMLIT2

This question paper consists of 9 pages including a 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. QUESTION 3.1 must be answered with reference to ANNEXURE A.

2. Number the questions 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 and steps must be shown clearly.

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

6. Start EACH question on a NEW page.

7. Write neatly and legibly.

QUESTION 1

Zeederberg High School has two Grade 12 classes, namely Grade 12A and Grade 12B. These two classes are in competition with each other. This competition is about raising funds for the school.

1.1 Both of these classes will be selling cold drinks during break time. They buy the cold drinks in 2-litre bottles.

Grade 12A uses 125 millilitre cups and sells it at R2,00 each.
Grade 12B uses 250 millilitre cups and sells it at R3,50 each.

1.1.1 How many cups can Grade 12A sell from ONE 2-litre bottle? (3)

1.1.2 How many cups can Grade 12B sell from ONE 2-litre bottle? (3)

1.1.3 They bought the 2-liter cold drinks for R8,99 each. From selling ONE 2-litre, Grade 12B claims their profit will be greater than that of Grade 12A, because their cups are bigger and they charge more per cup. Show with the necessary calculations whether you agree or disagree with Grade 12B. (8)

1.1.4 Calculate the percentage profit that Grade 12A made on selling ONE 2 *litre*-bottle.
Use the formula:

$$\textbf{Percentage profit} = \frac{\textbf{Profit}}{\textbf{Cost Price}} \textbf{ x 100}$$

Give your final answer to the nearest 10 percent. (3)

1.2 The following stack bar graph shows the sales of the cold drinks of the two classes for two weeks. Use the graph to answer the questions below.
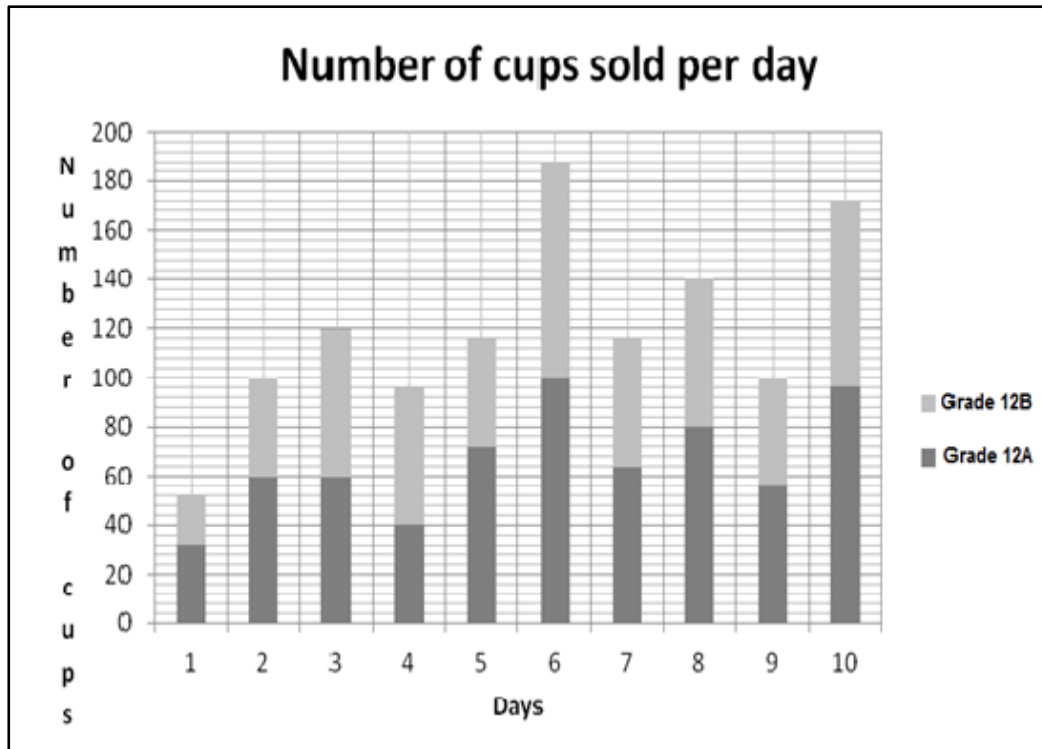

1.2.1 On which day or days did both classes sell the same amount of cups of cold drinks? (2)

1.2.2 Calculate the difference between the most number of cups of cold drinks and the least number of cups cold drinks sold per day for Grade 12B. (3)

1.2.3 There was only ONE day that Grade 12B sold more cups of cold drinks than Grade 12A. Which day was it? (2)

1.2.4 What is the modal value of the number of cups of cold drinks for the two-week period for both classes? (2)

1.2.5 Grade 12A claims that on average they sell more cold drinks than Grade 12B. Do you agree, or disagree with this statement? Show all necessary calculations to justify your answer. (8)

1.2.6 Write the number of cups of cold drinks for Day 1 of Grade 12A and the number of cups of cold drinks for Grade 12B as a ratio in its simplest form. (2)

[36]

QUESTION 2

2.1 Vuyo bought tuna in bulk from a factory shop at a very good price. He wants to send some of it to his sister. Look at the following drawings (not drawn to scale) and answer the questions that follow.
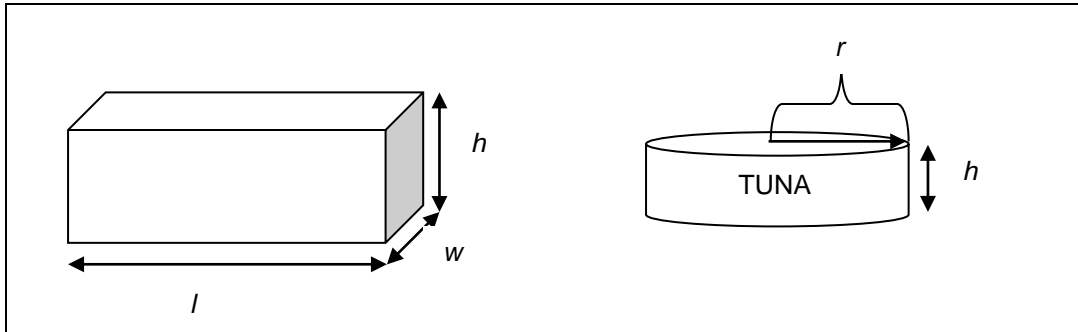
Dimensions of the box	Dimensions of the tuna tin
Length (*l*) = 48 cm Width (*w*) = 35 cm Height (*h*) = 15 cm	Radius (*r*) = 4,2 cm Height (*h*) = 3,8 cm

2.1.1 How many tuna tins can Vuyo pack across the length of the box? (4)

2.1.2 How many tuna tins can Vuyo pack across the width of the box? (3)

2.1.3 How many tuna tins can Vuyo stack on top of each other? (3)

2.1.4 Vuyo claims that he can get more than 50 tuna tins packed in the box. Show with the necessary calculations whether his statement is true. (3)

2.2 Vuyo has two options to get this box to his sister. He can either deliver it himself or he can make use of the Post Office Services.

- The distance between Vuyo and his sister is 100 km. Vuyo's car uses 7,6 litres of petrol for every 100 km. At the time that Vuyo wanted to go to his sister, the petrol cost was R13,20 per litre.

- The Post Office charges R35,10 for the first kilogram and for each additional kilogram or a part of a kilogram R4,70. The mass of the tuna tin is 170 gram.

Use the above information and determine by means of calculations which of these two options will be the most economical one for Vuyo. (8)

[21]

QUESTION 3

3.1 Study the map of the Johannesburg City Centre, **ANNEXURE A**, and answer the questions below.

    3.1.1 The traffic in Catherine Road (**Grid B2**) can only flow in one direction. What is this direction of flow? (2)

    3.1.2 What do we call streets that only flow in one direction? (2)

    3.1.3 Name any street where the traffic can only flow in an easterly direction. (2)

    3.1.4 Give the grid reference of the Johannesburg College of Education. (2)

    3.1.5 Marcia wanted to visit the Johannesburg Art Gallery (**Grid C3**). The person who directed her gave her the wrong directions and she found herself at the City Hall (**Grid B3**). Give Marcia detailed directions how to walk from the City Hall to the Johannesburg Art Gallery. (3)

    3.1.6 Write the scale of the map as 1 : … Show all calculations. (3)

    3.1.7 Marcia and her friend, Zoe, came from different directions to the Johannesburg Station (**Grid B3**). Marcia travels from the City Hall and Zoe from the Civic Centre (**Grid B2**). With the necessary calculations, who will be walking the shortest distance in metres? (6)

        HINT: Use the centre of the dots as your starting points and follow the roads.

3.2 While Marcia and Zoe are waiting on the train, they played a game with a pack of 52 playing cards. They are playing a game, called *7 cards* where each one is dealt seven cards at the beginning of the game. They then have to build seven cards of the same suite. A pack of playing cards has 4 suites namely diamonds, hearts, clubs and spades.

    3.2.1 How many of each suite are there before dealing the cards? (2)

    3.2.2 What is the probability that the first card dealt to Zoe will be black and 10? (3)

[25]

QUESTION 4

4.1 For the type of work that Blythe is doing, he must have a reliable laptop or computer system. His laptop crashed and he is desperately in need of a new one. He saw the following advertisement in the newspaper. Study the advertisement carefully and answer the questions below.

4.1.1 Calculate the price of the package before the discount. (2)

4.1.2 The discount in the advert is R900. Calculate this discount as a percentage to 1 decimal place. (3)

4.1.3 The fine print in the bottom right hand corner indicates "Interest rate from 8,5%. Total repayment from R6 202,39." Briefly explain the meaning of this fine print. (2)

4.1.4 If the discounted price is used with the interest rate of 8,5% per annum as indicated in the fine print, calculate the final amount. Also state whether the final value is the same as in the fine print and if not, give an explanation. Use the simple interest formula:

$A = P(1 + ni)$, **where**
A = **Final amount**
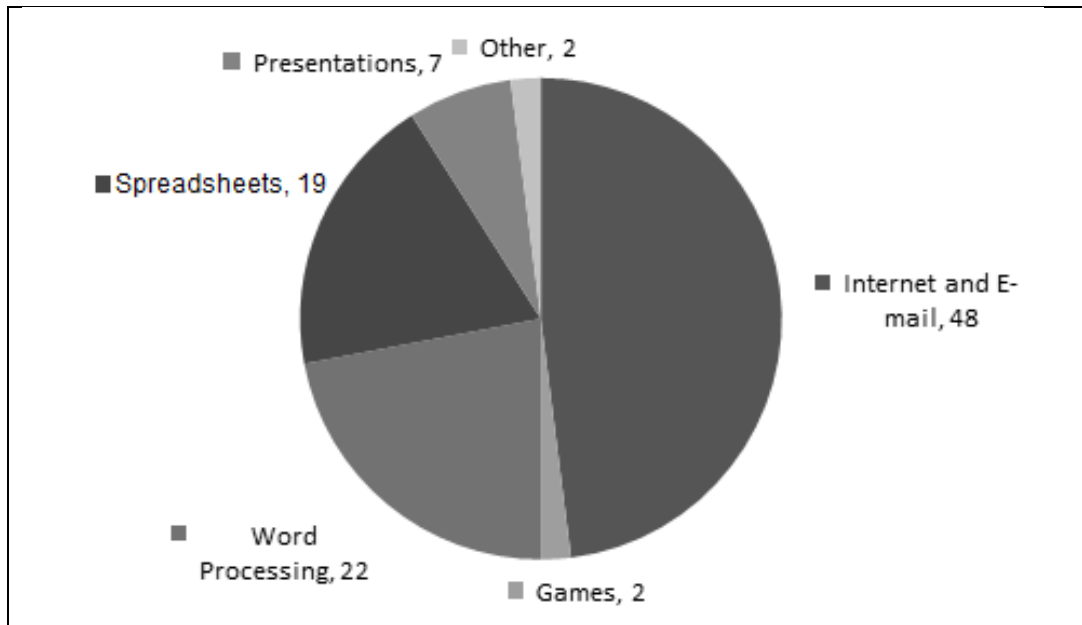P = **Original amount**
i = **interest rate**
n = **term in years** (5)

4.1.5 Explain ONE disadvantage of buying an item on credit. (2)

4.2   The following pie chart shows what Blythe uses his laptop for. Answer the questions that follow.

4.2.1   Give a suitable heading for the pie chart.   (2)

4.2.2   Name any TWO usages of the laptop that fall under the category of "other".   (2)

[18]

TOTAL: 100

           Please turn over

QUESTION 3.1

ANNEXURE A