Province of the
EASTERN CAPE
EDUCATION

NATIONAL SENIOR CERTIFICATE

GRADE 11

NOVEMBER 2019

MATHEMATICAL LITERACY P2

MARKS: **100**

TIME: **2 hours**

IMLIT2

This question paper consists of 10 pages.

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. Number the answers 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. Show ALL calculations clearly.
5. Maps and diagrams are NOT drawn to scale, unless otherwise stated.
6. Indicate units of measurement, where applicable.
7. Round off ALL final answers appropriately accordingly to the given context, unless stated otherwise.
8. Start EACH question on a NEW page.
9. Write neatly and legibly.

QUESTION 1

1.1 Tiaan started working for a company on the 4th February 2019. He earns a net salary of R195 000 per annum without any bonus. He sets aside R12 000 per month for monthly expenses and saved 75% of the balance towards a deposit for a car. Below is a table showing Tiaan's monthly expenses before buying a car.

TABLE 1: TIAAN'S MONTHLY EXPENSES BEFORE BUYING A CAR

EXPENSES	AMOUNT IN RAND
Rent and Electricity	R3 550
Life insurance	R550
Household insurance	R430
Loan repayment	R1 780
Groceries	R2 200
Transport (bus)	R960
Clothing accounts	R1 030
Entertainment	R500
Other	R1 000
Total	**R12 000**

1.1.1 Calculate Tiaan's net monthly salary. (2)

1.1.2 Tiaan must pay a deposit of R15 000 on the car that he wants to buy. For how many months does Tiaan have to save to pay for his deposit? (5)

1.1.3 Tiaan claims that the difference in percentage that he pays towards Life insurance and Household insurance from his net salary is more than 2%. Show, with the necessary calculations, whether the statement is valid or not. (6)

1.1.4 Determine the probability of randomly selecting an expense that is greater than R550 but less or equal to R2 200. Give your final answer to 3 decimal places. (3)

1.1.5 Tiaan's mother told him that he will have an extra R960 left to spend after he bought the car, because he will not be paying for transport any longer. Give a valid reason why you disagree with his mother's statement. (2)

1.2 The following picture show a scale drawing of a car.

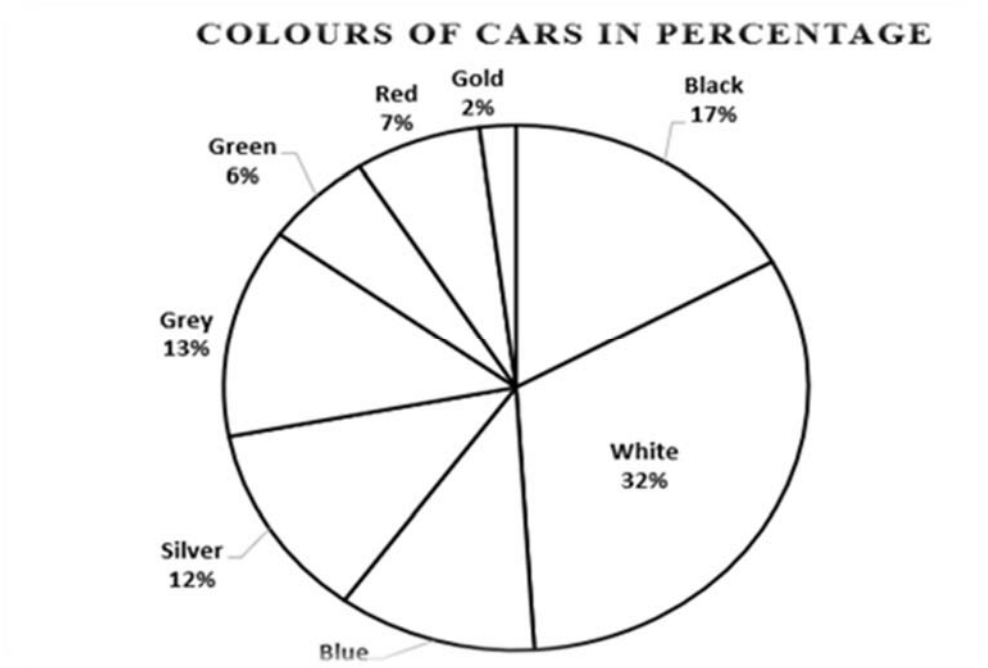
Every 1 in. in this drawing represents 36 in. in real life.

in. means inches

If the length of the car on the picture is 4,5 inches, determine the length of the car in real life. Give your final answer in metres.

You may use the following conversion:
1 inch = 2,54 cm (4)

1.3 A motor company manufactures 2 500 cars per month and uses 8 different colours of paint for the cars. Use the sector diagram (pie chart) which represents the percentage cars that is painted in each of the different colours to answer the questions.



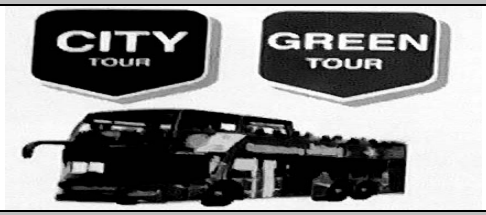
1.3.1 Determine how many blue and gold cars are manufactured in total per month. (4)

1.3.2 Identify THREE colours that make up exactly 55% of the total number of cars manufactured in a month. (2)

1.3.3 Give ONE reason why white cars are the most popular colour sold. (2)
[30]

QUESTION 2

2.1 The following is an advertisement for bus ticket options when people visit Johannesburg to do sight-seeing. Use the information in the advertisement to answer the questions below.

<table>
<tr><th colspan="2">BUS TICKET OPTIONS</th></tr>
<tr><th>BUS TICKET</th><th>BUS and SOWETO COMBO</th></tr>
<tr><td> 
</td><td> 
</td></tr>
<tr><td>R220 per adult</td><td>R520 per adult</td></tr>
<tr><td>Online Price: R200
Juniors 5 – 17 years: R110
Kids under 5 years: FREE
Maximum 2 KIDS/ADULTS
 

Valid for 1 day ONLY
Valid on day of purchase ONLY</td><td>Online Price: R470
Juniors 5–17 years: R260
Kids under 5 years: FREE
Maximum 2 KIDS/ADULTS
 

1 Day valid bus ticket
and
Soweto Tour (same day)
Valid for 1 day ONLY</td></tr>
<tr><td colspan="2">PAY R100 and UPGRADE
to a 2-Day ticket
*Upgrading must be done on the day of valid 1 Day Ticket</td></tr>
<tr><td> 
</td><td> 
</td></tr>
<tr><td>R320 per adult</td><td>R620 per adult</td></tr>
<tr><td>Online Price: R300
Juniors 5 – 17 years: R210
Kids under 5 years: FREE</td><td>Online Price: R570
Juniors 5–17 years: R360
Kids under 5 years: FREE
2-Day valid bus ticket
and
Soweto Tour (either day)
Valid over 2 consecutive days ONLY</td></tr>
</table>

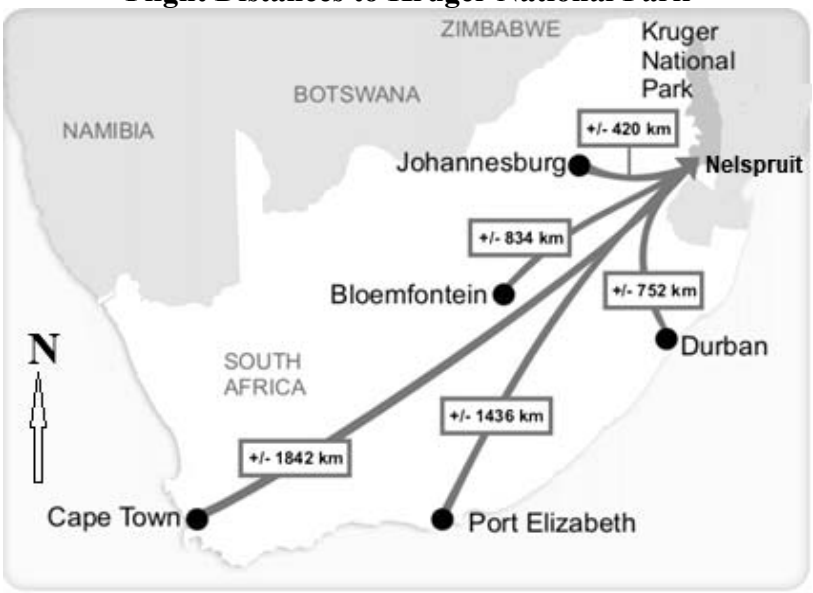
The Adams family (father, mother, grandfather and two kids aged 10 and 18 years respectively) intend to go on this sightseeing tour.
The Naidoo family (father, mother, two grandfathers, grandmother and three kids aged 4, 9 and 17 years respectively) will join the Adams family on this tour.

Both families bought tickets online for the "Bus and Soweto Combo" for a 2-day tour. The Naidoo family stated that they will pay 50% more than the total of the Adams family. Show, with the necessary calculations, whether the statement is valid or not. (8)

2.2 Mr Naidoo invested R20 750 for one and a half years at an interest rate of 7,5% per annum compounded annually. Calculate how much interest the investment earned. (6)

2.3 Study the following maps on flight distances and duration of flights from various cities to the Kruger National Park.

Flight Distances to Kruger National Park



Duration of flights to Kruger National Park

2.3.1 In which direction does the plane travel from Port Elizabeth to the Kruger National Park? (2)

2.3.2 A businessman needs to be at the Kruger National Park (Nelspruit) for a meeting at 13:30. He is first going to meet a business partner for two hours at OR Tambo International Airport (Johannesburg).
Will the businessman be on time for his meeting if his flights depart at 08:20 from Cape Town International Airport and then again at 12:55 from OR Tambo International Airport (Johannesburg)? (4)

2.3.3 Determine the speed that the aeroplane is travelling at from Cape Town to Nelspruit. Give your final answer to the nearest kilometre per hour.

You may use the following formula:
Distance = Speed × Time (5)

2.3.4 Use the map for the flight distances and determine the probability that a aeroplane that is randomly selected, will travel from a coastal city. (2)
[27]

QUESTION 3

3.1 Ramon works for a fruit canning company. He earned a gross salary of R15 550 per month. He contributes to the Unemployment Insurance Fund (UIF).

NOTE:

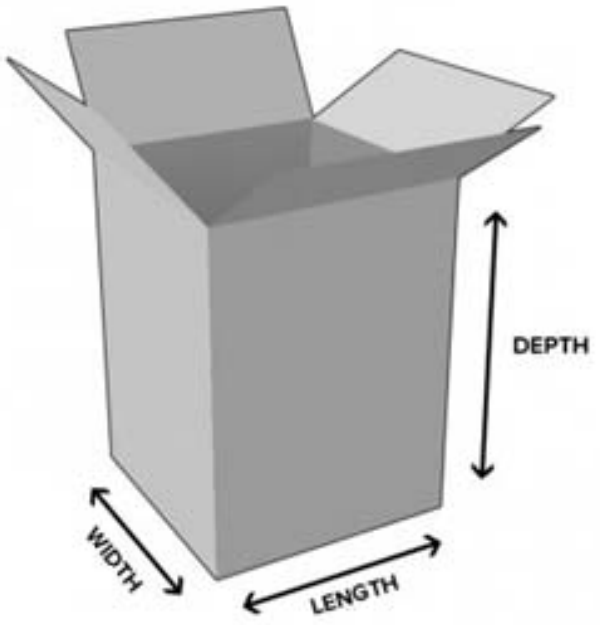
- **If a person earns R12 478 and more per month, the UIF will only be paid on the maximum amount of R12 478.**

3.1.1 Explain, giving TWO reasons, when a person is entitled to claim for UIF benefits. (2)

3.1.2 Determine the total annual UIF contributions that will be paid. (4)

3.1.3 Give ONE valid reason why the UIF will refuse to pay out claims to beneficiaries. (2)

3.2 The factory wants to pack fruit cocktail tins in a rectangular box. Below are illustrations of the rectangular box as well as the fruit cocktail can that they want to use.

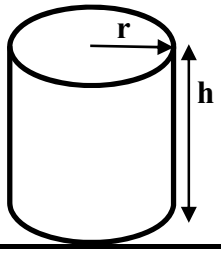


Dimensions of rectangular box:

Length = 485 mm
Width = 305 mm
Height (Depth) = 745 mm

Dimensions of the fruit cocktail can:

Height (h) = 10,8 cm
Radius (r) = 3,5 cm



3.2.1 The supervisor claims that the box can hold more than 144 fruit cocktail cans. Verify, with the necessary calculations, whether the supervisor's claim is valid or not. (8)

3.2.2 Determine the surface area in cm^2 of the paper that is used to wrap the can (excluding top and bottom parts).

You may use the following formula:

- **Surface area of wrapping = π × diameter × height of can, where π is used as 3,142**

NOTE:
There will be an extra 4 mm of wrap paper used as an overlap. (4)

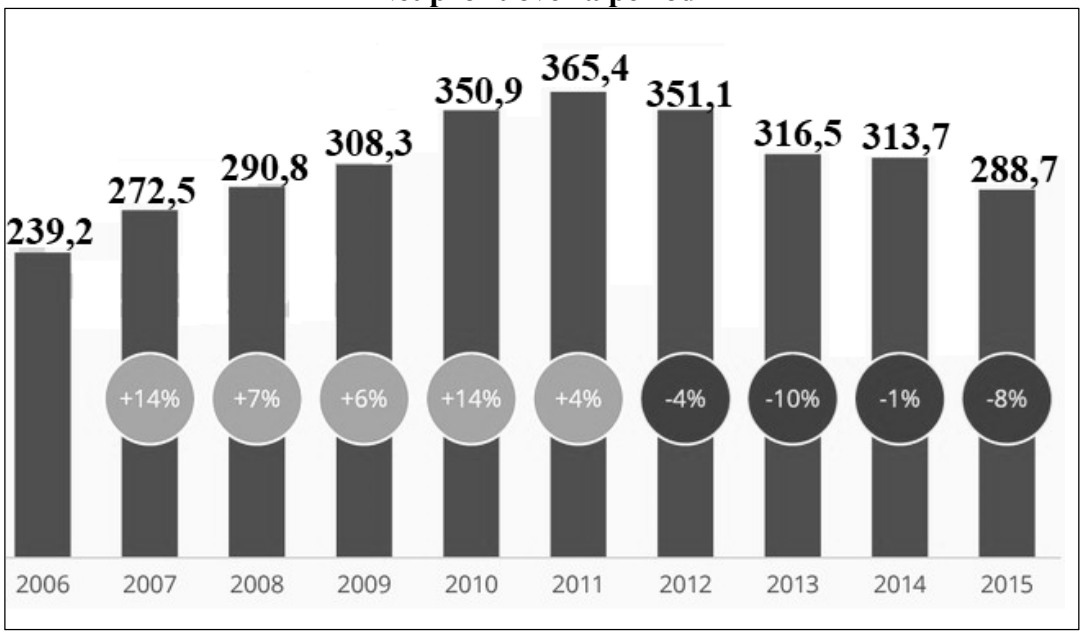
3.2.3 Give a possible reason for the extra 4 mm needed for the wrapping paper. (2)

[22]

QUESTION 4

4.1 The following graph shows the net profit of a fruit canning factory over a period.

Net profit over a period



NOTE:
The values on top of the bars are given in millions of rand.

4.1.1 Calculate the mean net profit over the entire period. (3)

4.1.2 Show how the percentage change for 2012 was calculated. (3)

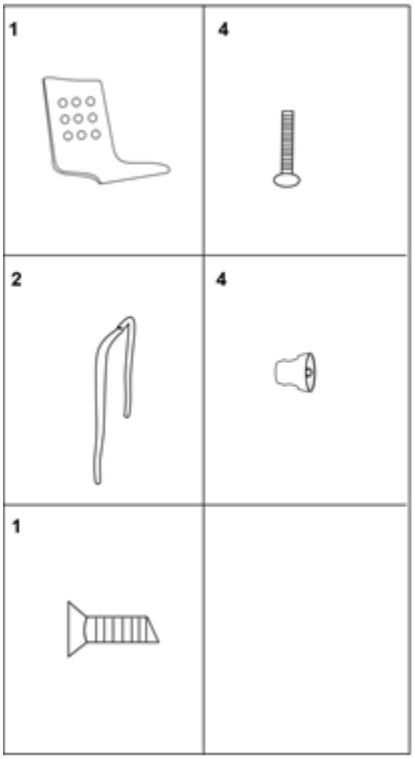
4.1.3 Explain the trend that the factory experienced over the years in terms of their net profit. (4)

4.1.4 For 2013 and 2014 the bars are almost of the same height, but the percentage change differs. Explain why this is the case. (2)

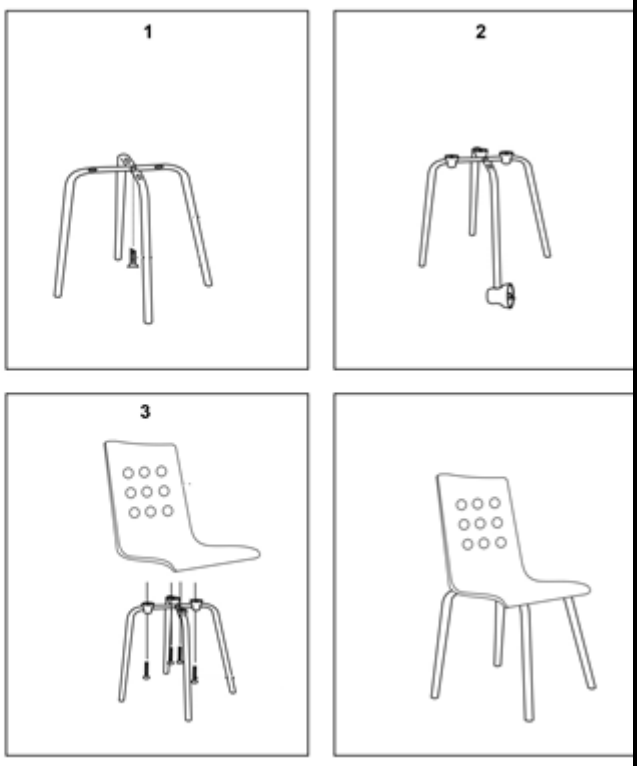
4.2 The fruit canning company bought some office chairs, but they must assemble it. The following is an illustration with instruction sheet on how the chairs should be assembled. Study the illustration and answer the questions that follow.

PARTS AND INSTRUCTIONS

Number of parts



Steps to assemble the office chair



4.2.1 Determine how many pieces in total will be used to assemble 75 office chairs. (3)

4.2.2 Give a detailed description of how an office chair should be assembled. (6)

[21]

TOTAL: 100