Grade 11
Time: 2 Hours
Examiner: Mr P Furstenburg

Bergvliet High School
Mathematical Literacy
FINAL EXAM
PAPER 1

November 2023
Marks: 100
Moderator: Mrs L Storey

Name: _____ Teacher: FG / SE / SJ / ST

Instructions:

- Answer all the questions
- Read each question carefully and answer all questions on the question paper
- Use black or blue ink only and no correctional fluid is permitted
- Please write neatly and legibly
- This question paper consists of **11 pages** including the cover page

Question	Assessment Marks	Learners Mark
1	25	
2	22	
3	17	
4	36	
Total	100	/ 100

Question 1

1.1 Study Ms Kiwi's payslip for the month of October 2023 shown below and answer the questions that follow.

Faf's Fluffy Parlour **9 Blow Dry Lane** **Silky Town** **Tel: 021 999 9999** **9999** **Email: Faf@999.com**					
Payslip for the month of October 2023					
Employee's Name	**Francis Kiwi**		**Paid Days:**	**30**	
Gender:	**Female**		**Leave without pay:**	**3**	
Occupation:	**Dog washer/Groomer**		**Pay Slip no:.**	**08/2023**	
Earnings	Amount		Deductions	Amount	
Basic Salary	R7 350		PAYE	R1 102.50	
Overtime hours	26		UIF	**A**	
Overtime rate	R75				
Overtime payment	R1 950				
Total Payment	R9 300		Total Deductions	**B**	
Net Pay	**C**				

1.1.1 Write down Ms Kiwi's occupation.

_____ (2)

1.1.2 What does the acronym UIF stand for?

_____ (2)

1.1.3 Calculate Ms Kiwi's contributions towards her UIF (A).

_____

_____ (2)

1.1.4 Calculate Ms Kiwi's:

a) Total Deductions (B)

_____

_____ (2)

b) Net Pay (C)

_____

_____ (3)

1.1.5 Show by means of calculations how the overtime payment of R1 950 was determined.

_____

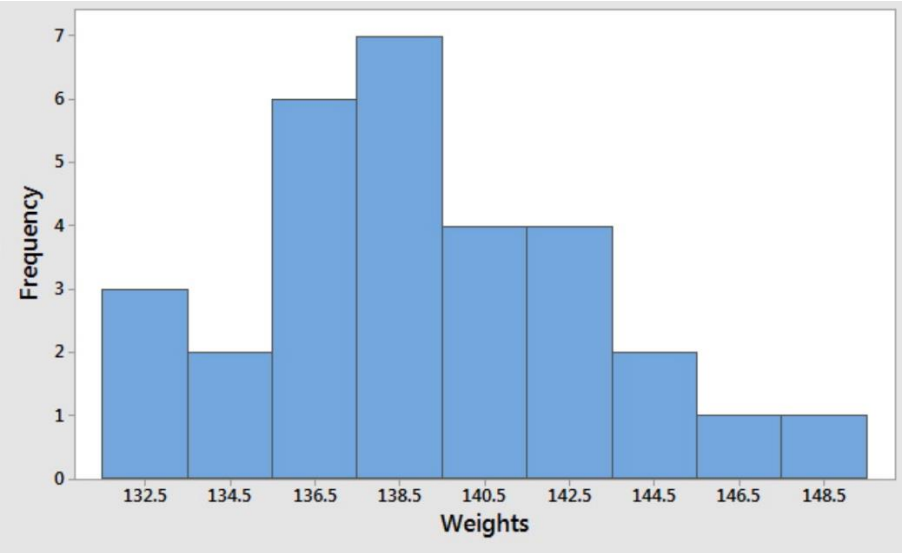
_____ (2)

1.1.6 In November 2023, Ms Kiwi is going to receive a salary increase of 8,3%.
Calculate what Ms Kiwi's basic salary will be for November.

_____

_____ (4)

1.2 Refer to the graph below representing the weights (in lbs) of the dogs that Ms Kiwi groomed in one week.



1.2.1 Name the type of graph used to display the data above.

_____ (2)

1.2.2 Determine the number of dogs that were groomed during the week..

_____ (2)

1.2.3 Determine the modal weight(s) _____ (2)

1.2.4 Which unit of mass does the abbreviation "lb" represent? _____ (2)

[25]

Question 2

2.1 Eliza Bedi, an avid springbok supporter, is wanting to retire and follow her team around the world instead of working. She compares the pension fund estimations for the year 2022 and 2023. She wants to retire at the end of 2023. Study the information below and answer the questions that follow.

Estimated Retirement	2023	2022
Monthly Pension payable	R27 236	R26 383
Lump sum payable	R941 265	R919 363
Discharge monthly pension payable	R25 024	R23 248
Discharge lump sum payable	R832 567	R799 313
Monthly pension payable to spouse(s)	R13 997	R13 692
Lump sum payable to beneficiaries	R2 712 548	R2 592 409
Retirement Benefit	----------	R 2 836 836

2.1.1 Write down the value of the lump sum payable to beneficiaries in 2022 in words.

_____

_____

_____ (2)

2.1.2 The retirement benefit for 2023 is 2,8% more than the value in 2022, calculate the value of the retirement benefit in 2023.

_____

_____

_____

_____

_____ (4)

2.2 Mrs Bedi's son Cheslin sells cell phones as a side hustle. The price list below shows the cost price and profit for the different types of phones in the year 2023. Study the price list and answer the questions that follow. **All prices include VAT of 15%.**

Samsung Galaxy S23 Cost Price R16 665,72 Profit R3 333,16		**Samsung Galaxy A34 5G** Cost Price R5 832,50 Profit R1 166,50	
Samsung Galaxy S23 ULTRA Cost Price R24 999,16 Profit R4 999,83		**Samsung Galaxy A14** Cost Price R2 749,17 Profit R549,82	

2.2.1 Determine the ratio (in simplest form) of the total profit to the total income sale of the four cell phones.

_____

_____

_____

_____ (5)

2.2.2 The Samsung Galaxy A34 5G has a selling price of R6999 including VAT.
Calculate the VAT Exclusive price of the Samsung Galaxy A34 5G.

_____

_____

_____

_____ (2)

2.2.3 The cost price of the Samsung Galaxy S23 ULTRA in 2022 was R21 665,83. It s costing less this year due to new cell phones on the market. Calculate the percentage decrease on the cost of the S23 ULTRA. Give your answer to the nearest percentage.

You may use the following formula:

$$\text{Percentage decrease} = \frac{\text{new price} - \text{old price}}{\text{old price}} \times 100\%$$

_____

_____

_____ (4)

2.3 Cheslin's friend, Bongi Witkant, received the statement indicating water tariffs for the month of July 2023. Study the water tariffs table below from the RWC Municipality.

RWC Municipality **Mr B. Witkant: July 2023 Statement**	
Code	**Water tariifs (per kilolitre)** **(Excluding VAT)**
Water Tariff Bracket 1	6,110 kilolitre @ R16,992900
Water Tariff Bracket 2	4,073 kilolitre @ R17,326130
Water Tariff Bracket 3	2,817 kilolitre @ R24,06370
AMOUNT PAID	R ----------

Use the information and the table above to answer the following question.

2.3.1 Bongi asked his two sons, Kurt-Lee and Damian, to calculate the amount **(including VAT = 15%)** he has to pay the RWC Municipality.

- Kurt-Lee calculated R263,48
- Damian calculated R258,48

Bongi claimed that Damian was correct. Verify showing ALL calculations whether the statement is correct.

_____

_____

_____

_____

_____

_____ (5)

[22]

Question 3

3.1 Motor trade sales in the months January to December for the years 2018 and 2019 at current prices then are shown in the table below.

MOTOR TRADE SALES AT CURRENT PRICES THEN (RAND IN MILLIONS)		
MONTH	**2018**	**2019**
January	53 044	53 844
February	53 321	52 361
March	58 353	55 646
April	49 633	54 981
May	56 064	56 846
June	55 263	54 249
July	56 409	59 270
August	57 598	58 435
September	54 436	54 467
October	60 406	59 960
November	60 417	57 915
December	51 480	52 718
TOTAL	666 424	670 692

Use the information above to answer the questions that follow.

3.1.1 Write down the month and the year when trade sales were the lowest of the two years.

_____ (2)

3.1.2 Determine the range for the amount of trade sales for the months in the year 2019.

_____

_____ (3)

3.1.3 Calculate the mean trade sales for the year 2018.

_____

_____ (3)

3.1.4 Determine the median value of the trade sales for the months (Jan-Dec) in the year 2019.

_____

_____

_____ (3)

3.1.5 Express the amount of trade sales of October 2018 as a percentage of the total trade sales for the year 2018.

_____

_____

_____ (3)

3.1.6 Determine the probability (as a decimal), of randomly selecting a month that shows a decline in the amount of trade sales from year 2018 to 2019.

_____

_____

_____ (3)

[17]

Question 4

4.1 Canan started a cleaning service, "Canan's Cleaning Clogs". Below are the weekly costs and charges involved in his business.

Rent	R250
Salaries	R400
Materials required per pair of shoes	R25
Charge to the customer per pair of shoes	R75

Use the above information to answer the questions that follow.

4.1.1 Write an equation that represents the Income and Expenses from the information in the table above.

Income = _____

Expenses = _____ (3)

4.1.2 What are the weekly fixed costs that Canan pays per week?

_____

_____ (2)

4.1.3 The table below shows the income and expenses from the business.

INCOME AND EXPENSES FOR CANAN'S CLEANING CLOGS						
Number of pair of shoes	0	5	10	15	18	20
Expenses	650	775	900	1025	1100	A
Income	0	375	750	1125	1350	1500

a) Calculate the value of A

_____

_____ (2)

b) Canan has learnt that starting a business is not easy. It takes time to get your business known. His records show that:

- In week 1 - He cleaned 5 pair of shoes
- In week 2 - He cleaned 10 pairs of shoes
- In week 3 - He cleaned 20 pairs of shoes

Use the information above and the table from 4.1.3 to show by means of calculations that Canan made a loss of R200 in the 3 weeks.

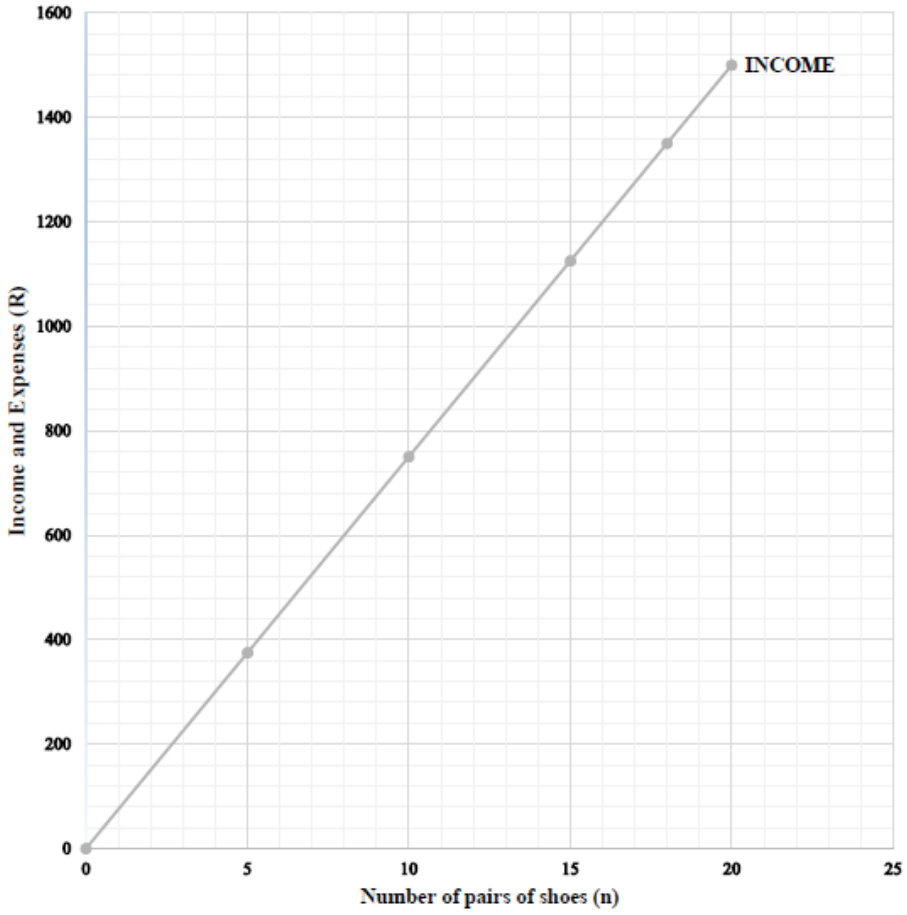
_____

_____

_____

_____ (5)

4.1.4 A line graph showing the income from the cleaning of shoes has been drawn on Answer Sheet 1.
Use the same grid of axes complete and draw a graph representing the expenses for the cleaning of shoes.



(4)

4.1.5 Use the graph to determine the number of pair of shoes at the break-even point.

_____

_____ (2)

4.2 Canan's brother who lives in Japan sent him money to assist him in his business.
He sent Japanese yen (¥) 25 000. Determine the amount in Rand Cana received.

You may use the exchange rate **1 Yen (¥) = R0.123626**

_____

_____

_____ (3)

4.3 The masses (in kg) of the mens and ladies Springbok teams were recorded.
The raw data is indicated in the table below:

Gender	Masses in kg														
Female	71	82	68	75	91	76	66	69	112	89	83	81	69	73	82
Male	139	131	94	118	116	128	111	136	108	126	112	97	84	104	77

Use the above information to answer the following questions.

4.3.1 Complete the frequency table below recording the masses of the mens and ladies Springbok teams.

Weight Category	Female			Male		
	Tally	Frequency	Cumulative Frequency	Tally	Frequency	Cumulative Frequency
60 – 69						
70 – 79						
80 – 89						
90 – 99						
100 – 109						
110 – 119						
120 – 129						
130 – 139						

(6)

Use the above information and the table able to answer the questions that follow.

4.3.2 In which category do most of the females fall?

_____ (2)

4.3.3 Calculate the percentage of men with a mass between 80kg to 100kg in relation to the entire term masses recorded.

_____

_____

_____ (4)

4.3.4 Determine the probability (as a percentage) of randomly selecting a female weighing 85kg or more from the group of females recorded.

_____

_____ (3)

[36]

Grade 11 | Bergvliet High School | November 2023
Time: 2 Hours | Mathematical Literacy | Marks: 100
Examiner: Mr P Furstenburg | FINAL EXAM | Moderator: Mrs L Storey
PAPER 1

Name: MEMO | Teacher: FG / SE / SJ / ST

Instructions:

- Answer all the questions
- Read each question carefully and answer all questions on the question paper
- Use black or blue ink only and no correctional fluid is permitted
- Please write neatly and legibly
- This question paper consists of **11 pages** including the cover page

Question	Assessment Marks	Learners Mark
1	25	
2	22	
3	17	
4	36	
Total	100	/ 100

Question 1

1.1.1	Dog washer/Groomer ✓✓	2RT correct occupation (2)	F L1
1.1.2	Unemployment Insurance Fund ✓✓	2O correct acronym (2)	F L1
1.1.3	R7 350 x 1% ✓ = R73,50 ✓	1M multiplying 1% 1A answer (2)	F L1
1.1.4 (a)	R1 102,50 + R73,50 ✓ = R1 176,00 ✓	1M adding the deductions 1A answer (2)	F L1
1.1.4 (b)	R9 300 ✓– R1 176 ✓ = R8 124 ✓	1RT total payment 1CA subtractions total deductions 1A answer (3)	F L1

1.1.5	R75 ✓x 26 hours ✓ = R1 950	1RT R75 rate 1M multiplying rate by 26 hours (2)	F L1
1.1.6	Increase = 8,3% ✓x R7 350 ✓ = R610,05 New Salary = R7 350,00 + R610,05 ✓ = R7 960,05 ✓	1MA percentage of 8,3% 1M multiplication with R7 350 1MCA adding increase to basic salary 1CA answer (4)	F L1
1.2.1	Histogram ✓✓	2RT correct answer (2)	D L1
1.2.2	3 + 2 + 6 + 7 + 4 + 4 + 2 + 1 + 1 ✓ = 30 dogs ✓	1M adding the number of dogs 1CA answer (2)	D L1
1.2.3	138,5kg ✓✓	2RG answer (2)	D L1
1.2.4	lb = pounds ✓✓	2O correct acronym (2)	D L1
		[25]	

Question 2

2.1.1	Two million, five hundred and ninety-two thousand, four hundred and nine ✓✓	2O correct value in words (2)	F L1
2.1.2	R2 836 836 x 2,8% ✓ = R79 431 ,41 ✓ Therefore, R2 836 836 + R79 431,41 ✓ = R2 916 267,41 ✓ **OR** R2 836 836 x 1,028 ✓✓ = R2 916 267,41 ✓✓	1M percentage of 8,3% 1A answer 1MCA adding value to 2022 benefit 1CA answer (4)	F L3
2.2.1	Profit = R3 333,16 + R1 166,50 + R4 999,83 + R549,82 ✓ = R10 049,31 CP = R16 665,72 + R5 832,50 + R24 999,16 + R2 749,17 ✓ = R50 246,55 ✓ 10 049,31 : 50 246,55 ✓ 1 : 5 ✓	1M adding profit values 1M adding cost price values 1MCA total values for P & CP 1M forming ratio 1CA simplified ratio (5)	F L4
2.2.2	R6 999 / 1,15 ✓ = R6 086,09 ✓	1M dividing by 1,15 1A answer (2)	F L2
2.2.3	% change = $\frac{\text{R24 999,16 – R21 665,83}}{\text{R21 665,83}}$ ✓ x 100 ✓ = 15,39% ✓ = 15% ✓	1SF numerator & denominator 1SF x 100% 1S simplification 1R rounding (4)	F L3
2.3.1	Amount charged: 6,110 x R16,992900 = 103,826619 4.073 x R17,326130 = 70,56932749 ✓ 2,817 x R24,06370 = 67,7874429 Total = R242,18 ✓ Amount charged including VAT: R242,18 x 1,15✓ = R278,51 ✓ Statement is INVALID ✓	1M multiplying by the rate 1S simplification 1M VAT calculation 1CA simplification 1O invalid statement (5)	F L4
		[22]	

Question 3

3.1.1	April 2018 ✓✓	1RT correct month 1RT correct year (2)	D L1
3.1.2	Range = R59 960 ✓ – R52 361 ✓ = R7 599 million ✓	1RT identifying the values 1M subtracting R52 361 1CA answer (3)	D L2
3.1.3	Mean = $\frac{\text{R666 424 000}}{12}$ ✓ ✓ = R55 535 333,33 ✓	1RT 2018 total 1M dividing by 12 1A answer (3)	D L2
3.1.4	Ascending order 52 361; 52 718; 53 844; 54 249; 54 467; **54 981; 55 646**; 56 846; 57 915; 58 435; 59 270; 59 960 ✓ Median in millions = $\frac{54\,981 + 55\,646}{2}$ ✓ = R55 313,50 ✓	1M arranging in ascending order 1M concept of median 1CA answer (3)	D L3
3.1.5	$\frac{60\,406}{666\,424}$ ✓ x 100 ✓ = 9,06% ✓	1RT October value 1M multiplying by 100 1A answer (3)	D L2
3.1.6	P = $\frac{5}{12}$ ✓ ✓ 0,42 ✓	1A numerator 1A denominator 1CA decimal (3)	D L3
		[17]	

Question 4

4.1.1	Income = R75 x n ✓ Expenses = R650 ✓ + R25 x n ✓	1O income equation 2O income expenses (3)	F L2
4.1.2	R650 ✓✓ **OR** R400 + R250 ✓ = R650 ✓	2RT value from table (2)	F L1
4.1.3 a)	A = R650 + (R25 x 20) ✓ = R650 + R500 = R1 150 ✓	1SF substitution 1A simplification (2)	F L2
4.1.3 b)	Total expenses = R775 + R900 + R1 150 ✓ = R2 825 ✓ Total income = R375 + R750 + R1500 ✓ = R2 625 ✓ Expenses – Income = R2 825 – R2 625 ✓ = R200	1MCA adding expenses with CA from 4.1.2 1S simplification 1M adding income values 1S simplification 1MCA subtracting two values (5)	F L4
4.1.5	13 at break-even point ✓✓	2RT value of 13 from graph (2)	F L2
4.2	1 Japanese yen = R0,123626 (¥) 25 000 = R? Amount received = 25 000 ✓x R0,123626 ✓ = R3 090,65 ✓	2MA multiplication of the two values 1A answer (3)	F L2

4.3.1 Complete the frequency table below recording the masses of the mens and ladies Springbok teams.

Weight Category	Female			Male		
	Tally	Frequency	Cumulative Frequency	Tally	Frequency	Cumulative Frequency
60 – 69	IIII	4	4		0	0
70 – 79	IIII	4	8	I	1	1
80 – 89	~~IIII~~	5	13	I	1	2
90 – 99	I	1	14	II	2	4
100 – 109		0	14	III	3	7
110 – 119	I	1	15	III	3	10
120 – 129		0	15	II	2	12
130 – 139		0	15	III	3	15
	✓	✓	✓	✓	✓	✓ **(6)**

4.3.2	80 - 89 ✓✓	2RT correct category (2)	D L1
4.3.3	$\frac{3}{15}$ ✓ x 100✓ 15 ✓ = 20%✓	1RT numerator 1RT denominator 1M multiply by 100 1CA answer as a percentage (4)	D L3
4.3.4	P(more than 75kg) = $\frac{9}{15}$ ✓ x 100✓ = 60%✓	1RT numerator 1M percentage calculation 1CA answer as a percentage (3)	P L2
		[36]	