LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF
EDUCATION

SEKHUKHUNE EAST DISTRICT – DISTRICT ON THE RISE

MATHEMATICAL LITERACY

2023 TERM 1 TEST

GRADE 12

DATE: 07 MARCH 2023

MARKS: 100

DURATION: 2 HOURS

This paper consists of TEN pages including Annexures and Answer Sheet

INSTRUCTIONS AND INFORMATION

1. The paper consists of FOUR questions. Answer ALL questions.
2. Number your answers according to the numbering system in the paper.
3. There are THREE Annexures as follows

   3.1. Use ANNEXURE A for QUESTION 1.

   3.2. Use ANNEXURE B for QUESTION 2.

   3.3. Use ANNEXURE C for QUESTION 4
4. Use the ANSWER SHEET for QUESTION 4.2.7
5. You may use an approved calculator, non-programmable and non-graphical.
6. Show all calculations clearly.
7. Indicate units of measurements, where applicable.
8. Round all answers according to the contexts, unless specified otherwise.
9. Maps and diagrams are not necessarily drawn to scale.

Question 1

Ms Abraham is 35 years old and earns a monthly salary of R27 500. She contributes 7.5% of her annual gross income towards her pension fund. ANNEXURE A shows the tax rates for 1 March 2019 to 29 February 2020

Use ANNEXURE A and the information above to answer the questions that follow.

1.1 Explain the word gross income as it was used in this context. (2)

1.2 Show how the value of R35 253 was calculated. (4)

1.3 Determine Ms Abraham's annual taxable income for the year 2020. (5)

1.4 Ms Abraham indicated that she should not pay more than R 50 000 towards tax during 2020. Calculate her annual tax to verify whether she is correct. (6)

1.5 Due to COVID-19, her monthly salary was reduced from R27 500 to R24 800 in 2021.Calculate the percentage decrease(convert the answer to one decimal place). (4)

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Question 2

ANNEXURE B shows an adapted version of an electricity account statement for Meso High School received from Eskom. Some of the information has been omitted. Interest is charged on accounts in arrears (unpaid on the date payable) at rate of 12.5% per annum, compounded monthly. All amounts exclude 15% of VAT.

Use ANNEXURE B and the information above to answer the questions that follow.

2.1 Show that the missing value A is 2678 Kwh. (2)

2.2 Calculate the value of B. (2)

2.3 Determine the value of C, the VAT amount charged. (2)

2.4 Calculate the total amount due (D), including interest. Show all calculations. (5)

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Question 3

3.1

Mrs Lediga from Meso High School decided to sell sandwiches during lunch breaks as a fundraising project. The cost price of making one sandwich is R8.50 and the daily fixed cost is R70.00.The intended profit margin is 35%.

A sandwich is a food item consisting of two slices of bread with a filling between them, eaten as a light meal.

TABLE 1: INCOME RECEIVED FROM THE SALE OF SANDWICHES

Number of sandwiches (n)	0	10	20	30	70	100
Income in rand(R)	0	115	230	345	805	1150

TABLE 2: COST PRICE OF SANDWICHES

Number of sandwiches(n)	0	10	20	30	n	100
Cost price in rand(R)	70	155	240	325	750	920

Mrs Lediga used the following formula to calculate the cost price of the Sandwiches:

Cost = R70 + R8.50 x n where n is the number of sandwiches

Use the information above to answer the questions that follow.

3.1.1 Determine the selling price of ONE sandwich (to the nearest 10 cents), if Mrs Lediga's intended profit margin is 35%. (4)

3.1.2 TABLE 1 shows the income received from the sale of sandwiches

Write down an equation that can be used to calculate the income. (2)

3.1.3 Calculate the value of n in Table 2, where n is the number of sandwiches (3)

3.2

Maranatha Metal Polishing Company is based in Durban. Given below is the company's income and expenditure statement for December 2020.

INCOME (R)		EXPENDITURE (R)	
National Products (Local)	1 984 609	Salaries	1 362 912
International Products (Exports)	3 055 713	Overtime	187 427
		Fuel	191 102
		Repairs & Services	115 346
		Office Supplies	1 891
		Cleaning Materials	5 007
		Water & Electricity	18 238
		Rent	47 311
TOTAL:	**5 040 322**	**TOTAL:**	**1 929 234**

Use the information above to answer the questions that follow.

3.2.1 What percentage of total income is total expenditure? (3)

3.2.2 Due to Covid-19, the export earnings for the company fell by 75% in January 2021 and local earnings decreased by 47%.

Calculate the profit/ loss for the company in January 2021. (7)

3.3

Mrs Lediga has planned a family (her husband and two daughters aged 7 and 10) 7 night stay holiday in Tokyo, Japan. At the end of November 2020 the average price of dinner per adult was $13.50 and half of the price per child. She estimated that the inflation rate (percentage price increase) should not be more than 10%by June 2021.
The exchange rate as at 2 march 2021 was

¥ 1= R0.1404 ¥ = Japanese Yen

$ 1= ¥ 106.86 $= US Dollar

[Sources: www.transferwise.com and MP 2019]

Use the information above to answer the questions that follow.

3.3.1 Mrs Lediga said that the total cost for their dinner would not exceed R3 000.00 for the duration of their stay.

Verify whether she is correct. (9)

3.3.2 Which is the weaker currency between the South African and the Japanese Yen? (2)

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Question 4

4.1

A statistician wants to check the trends of the number of tourists who visited South Africa from SADC countries and overseas in 2015.
The information is displayed in ANNEXURE C.

Use ANNEXURE C and the information above to answer the questions that follow:

4.1.1 Determine the total number of tourists from overseas countries who visited South Africa in 2015. Write your answer in words (4)

4.1.2 Calculate the mean number of tourists from SADC countries. (3)

4.1.3 Determine the probability (as a percentage) of randomly selecting a SADC country with the number of tourists not more than 1 million (2)

4.1.4 Write down the ratio of the number of tourists from Canada to the number of tourists from Mozambique in form 1: …… (3)

4.1.5 Calculate the inter-quartile range of tourists from overseas countries (2)

4.2

The data below represent the percentage marks achieved by Grade 12 learners in Life Sciences. The class consists of 20 learners.

64 57 58 62 59 **A** 60 61 62 71
62 65 66 64 75 80 **B** **B** 92 85

A is the lowest percentage mark

Use the information above to answer questions that follow:

4.2.1 Determine the percentage of data values that lies between the lower quartile and the upper quartile. (2)

4.2.2 Calculate the value of A, if the range of the marks obtained by the learners is 36. (3)

4.2.3 Write down the modal percentage. (2)

4.2.4 Determine the value of B, given that the mean mark obtained by the learners is 48. (3)

4.2.5 Calculate the median percentage mark. (3)

4.2.6 Determine the probability (as common fraction in simplified form) of randomly selecting a learner who achieved more than 80%. (3)

4.2.7 Complete the histogram of the number of learners obtaining the given mark intervals in ANSWER SHEET. (8)

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ANNEXURE A

Question 1

INCOME TAX RATES FOR INDIVIDUALS FOR THE FINANCIAL YEAR 1 MARCH 2019 TO 28 FEBRUARY 2020

Tax bracket	**Taxable income**	**Rates of Tax (R)**
1	0 – 195 850	18% of taxable income
2	195 851 – 305 850	35 253 + 26% of taxable income above 195 850
3	305 851 – 423 300	63 853 + 31% of taxable income above 305 850
4	423 301 – 555 600	100 263 + 36% of taxable income above 423 300
5	555 601 – 708 310	147 891 + 39% of taxable income above 555 600
6	708 311 – 1 500 000	207 448 + 41% of taxable income above 708 310
7	1 500 001 and above	532 041+ 45% of taxable income above 1 500 000
TAX REBATES		
Primary rebate (under 65)		R14 220
Secondary rebate (persons 65 and older		R22 014
Tertiary (persons 75 and older)		R24 615
TAX THRESHOLD		
Persons under 65		R79 000
Persons 65 and under 75		R122 300
Persons 75 and older		R136 750

Adapted from: www.sars.gov.za

ANNEXURE B

QUESTION 2

ADAPTED ELECTRICITY ACCOUNT STATEMENT

TAX INVOICE VAT registration number: Not supplied	ESKOM Tel : 0860037566 Fax : 0862437566 PO Box 8610 JHB 200
Account month : February 2020	Billing date : 2020-02-26 Tax invoice number : 599945472565 Account number : 5999481065
Name : Meso High School	Street address : 34 President Street Rethusitswe
Account Summary Balance brought forward	Amount in rand R 2 914.78
Electricity Kwh: Previous reading :112124 New reading : 114802 kwh used **:** **A** Energy charge(< 600 kwh) 600kwh @ R1.0566/kwh Energy charge(> 600 kwh) 2078kwh @ R1.7961 Adjustment interest on overdue account VAT (15%)	 R 633.96 **B** …… **C**
TOTAL AMOUNT DUE	**D**
DUE DATE : 2020-03-23	
BANKING DETAILS : BANK : ABSA BRANCH CODE :745648 BANK ACCOUNT NUMBER : 73000000128	

Source: www.eskom.co.za

NOTE:

- Accounts unpaid on the date payable are subject to interest at a rate of 12.5% Per annum, compounded monthly and services will be suspended.
- Kwh (kilowatt hour) is the unit of three-phase

ANNEXURE C

QUESTION 4.1

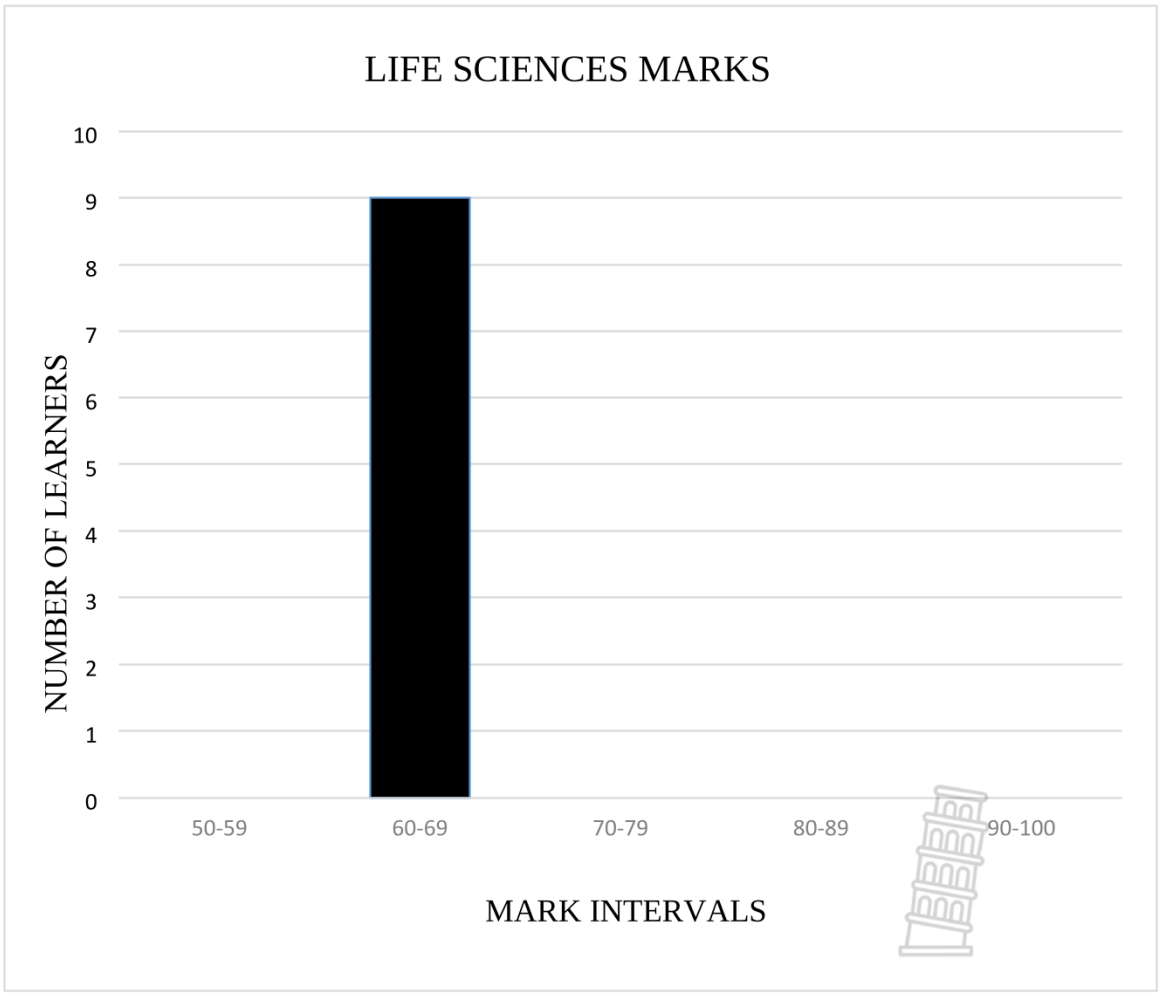
Tourist arrivals of Top 10 SADC countries[10]				Tourist arrivals of Top 10 overseas countries[10]			
Ranking	Country of origin	Visitor arrivals 2015	% Total arrivals	Ranking	Country of origin	Visitor arrivals 2015	% Total arrivals
1	Zimbabwe	1 900 791	28.9	1	United Kingdom	407 486	19.0
2	Lesotho	1 394 913	21.2	2	United States	297 226	13.9
3	Mozambique	1 200 335	18.3	3	Germany	256 646	12.0
4	Eswatini	838 006	12.7	4	France	128 438	6.0
5	Botswana	593 514	9.0	5	Netherlands	121 883	5.7
6	Namibia	212 514	3.2	6	Australia	99 205	4.6
7	Zambia	161 259	2.5	7	China	84 691	3.9
8	Malawi	135 260	2.1	8	India	78 385	3.7
9	Angola	48 416	0.7	9	Canada	56 224	2.6
10	Tanzania	35 817	0.5	10	Italy	52 377	2.4

ANSWER SHEET A

Name: _____

Question 4.2.7

Intervals	Frequency
50-59	
60-69	9
70-79	
80-89	
90-100	



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MEMORANDUM

MARKS: 50

This memorandum consist of EIGHT pages.

Question 1 [21]		
1.1	The total earnings before taxes and other deductions.✓ ✓O	2O explanation (2)
1.2	18% of taxable income = $\frac{18}{100} \times R195850$ ✓F✓SF = R35 253,36 ✓S = R35 253✓R	1F choice of formula 1SF substitution 1S simplification 1R rounding (4)
1.3	Taxable income = R27 500 – 7,5% of R27 500✓M = R27 500 – $\frac{7,5}{100}$ x R27 500✓SF = R27 500 – R2 062,50 = R25 437,50 ✓CA Annual taxable income = R25 437,50 x 12✓M = R305 250✓CA **OR** Annual income = R27 500 x 12 = R330 000✓A Taxable income = R330 000 – 7,5% of R27 500✓M✓CA = R330 000 – $\frac{7,5}{100}$ x R27 500✓M = R330 000 – R24 750 = R305 250✓CA	1M Multiply by 7.5% 1M Subtracting pension 1CA Answer 1M multiply by 12 1CA Answer 1A Correct answer 1M Multiply by 7.5% 1CA pension amount 1M Subtracting pension 1CA Answer (5)
1.4	Annual tax = R35 253 + 26% of (R305 250 –R195 850) ✓SF = R35 253 + $\frac{26}{100}$ x R109 400 = R35 253 + R28 444✓M = R63 697✓CA Payable tax = R63 697 – R14 220✓MA = R49 477✓CA She is correct. ✓O	1SF Correct substitution 1M Adding correct amounts 1CA simplification 1MA Subtracting rebates 1CA Answer 1O Conclusion (6)

1.5	Percentage decrease = $\frac{R24800 - R27500}{R27500} \times 100\%$ ✓SF✓M = -9,818181% ✓CA = -9,8%✓R	1SF Substituting correct values 1M Calculating % 1CA Answer 1R Rounding (4)
		[21]
Question 2 [11 Marks]		
2.1	A = 114 802 – 112 124✓RT✓M = 2 678KwH	1RT reading correct values 1M subtraction (2)
2.2	B = 2 078 Kwh x R1,7961/Kwh✓MA = R3 732,30✓CA	1MA Multiply by R1.7961 1A Correct Answer (2)
2.3	VAT = 15% of R4 366,26 ✓MA = R654,94✓A	1MA Calculating VAT 1A Correct answer (2)
2.4	Monthly interest rate = 12.5% ÷ 12 ✓M Amount of interest = R2 914.78 x 0.01041666667✓MA = R 30.36 ✓CA Total amount due (D) = R2 914.78 + R4 366.26 + R 654.94 + R30.36 ✓MA = R 7 966.77 ✓CA	1M Dividing by 12 1A Multiply by rate 1CA Answer 1 MA Adding correct values 1CA Correct answer (5)
		[11]

Question 3 [30 Marks]		
3.1.1	Selling Price = R 8.50 + R 8.50 x 35% ✓M = R 8.50 + R 2.98 ✓M = R 11.48 ✓CA = R 11.50 ✓ R **OR** Profit margin = R 8.50 x 35% ✓M =R 2.98 Selling price = R8.50 + R2.98 ✓M = R 11.48 ✓CA = R 11.50 ✓R **OR** Selling price = R 8.50 x 135% ✓A ✓M = R 11.48 ✓CA = R 11.50 ✓R	1M 35% of R8.50 1M Adding 1CA Answer 1R Rounding 1M 35% 0f R8.50 1M Adding 1CA Answer 1R Rounding 1A 135% 1M Multiply by 135% 1CA Answer 1R Rounding (4)
3.1.2	Income in (R) = R11.50 x number of sandwiches ✓A ✓CA **OR** Income in (R) = R11.50 x n where n is the number of sandwiches ✓CA ✓A	**CA from 3.1.1** 1CA R 11.50 1AMultiply by n (2)
3.1.3	R750 = R 70 + R8.50 x P R750 – R70 = R8.50 x P ✓M R 8.50 x P = R 680 P = R680 ÷ R8.50 ✓S P = 80 ✓CA	1M changing subject of the formula 1S Simplification 1CA Answer (3)
3.2.1	Total Expenditure = $\frac{R1929234}{R5040322} \times 100\%$ ✓MA ✓MA = 38,28%✓A	1MA dividing 1MA multiplying 1A correct answer (3)

3.2.2	75% of R3 055 713 = R2 291 784,75✓MA January export earnings = R3 055 713 − R2 291 784,75 = R763 928,25✓A 47% of R1 984 609 = R932 766,23✓M Local earnings = R1 984 609 − R932 766,23 = R1 051 842,77✓A Total income for January = R1 051 842,77 + R763 928,25 = R1 815 771,02✓A Loss for January = R1 815 771,02 − R1 929 234✓M = R113 462,98✓CA **OR** January export earnings = 0,25 × R3 055 713✓MA = R763 928,25✓A Local earnings = 0,53 × R1 984 609✓MA = R1 051 842,77✓A Total income for January = R1 051 842,77 + R763 928,25 = R1 815 771,02✓A Loss for January = R1 815 771,02 − R1 929 234✓M = R113 462,98✓CA	1MA multiplying by 75% 1A answer 1M multiplying by 47% 1A answer 1A addition and answer 1M subtracting 1CA answer 1MA multiplying by 25% 1A answer 1MA multiplying by 53% 1A answer 1A addition and answer 1M subtracting 1CA answer (7)
3.3.1	Price of dinner for 1 adult and 1 child in dollars = $ 13.50 + $ 6.75 ✓MA = $ 20.25 Price of dinner for 2 adults and 2 children in dollars = $ 20.25 x 2 ✓ M = $ 40.50 Price in Yen = $ 40.50 x 106.86 ✓C = ¥ 4 327.83 ✓ A Price in Rand = ¥ 4 327.83 x 0.1404 = R 607.63 ✓ C Amount for 7 nights = R607.63 x 7 nights = R 4 253.41 ✓CA Total cost including 10% increase = R 4 253.41 x 110% ✓M = R 4 678.75 ✓ CA Mrs Lediga is incorrect ✓O	1MA Adding correct values 1M Multiply by 2 1C Converting to Yen 1A Answer 1C Converting to Rand 1CA Cost for 7 nights 1M Increase by 10% 1CA Answer 1O Conclusion

	OR Price of dinner for 1 adult and 1 child = $ 13.50 + $ 6.75 ✓M = $ 20.25 Price of dinner for 2 adults and 2 children = $ 20.25 x 2 ✓M = $ 40.50 Price including 10% increase = $ 40.50 x 1.1 ✓M = $ 44.55 ✓ CA Amount for 7 nights = $ 44.55 x 7 nights = $ 311.85 ✓CA Amount in Yen = $ 311.85 x 106.86 ✓C = ¥ 33 324.29 ✓ A Amount in Rand = ¥ 33 324.29 x 0.1404 = R 4 678.73 ✓ C Mrs Lediga is incorrect. ✓ O	1M Adding correct values 1M Multiply by 2 1M Increase by 10% 1CA Answer 1CA Cost for 7 nights 1C Converting to Yen 1A Answer 1C Converting to Rand 1O Conclusion (9)
3.3.2	Yen ✓✓A **OR** Japanese Yen ✓✓ A	2A Correct Answer (2)
		[30]
Question 4 [38 Marks]		
4.1.1	Total number of tourists = 407 486 + 297 226 + 256 646 + 128 438 +121 883 + 99 205 + 84 691 + 78 438 + 56 244 + 52 377 ✓MA = 1 582 561 ✓CA One million five hundred and eighty two thousand five Hundred and sixty one ✓✓ CA	1MA Adding correct values 1CA Answer 2CA Correct answer (4)
4.1.2	Mean =(1 900 791 + 1 394 913 + 1 200 335 + 838 006 + 593 514 + 212 514 + 161 259 + 135 260 + 48 416+ 35 817) ÷ 10 ✓RT = 6 520 825 ÷ 10 ✓ M = 652 082 ✓ CA	1RT Correct values 1M Mean concept 1CA Answer (3)
4.1.3	Probability = 710 ×100 ✓MA = 70% ✓CA	1A Correct method 1CA Correct answer (2)

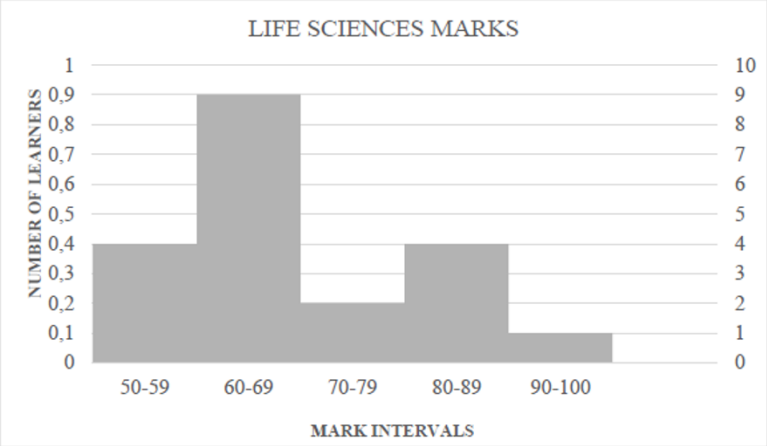
4.1.4	56 224 : 1 200 335 ✓ RT ✓ MA 1 : 21.35 ✓ CA	1RT both correct values 1MA ratio in correct order 1CA ratio unit **Accept 1: 21 and 1:21.4** (3)
4.1.5	IQR = 256 646 – 78 385 ✓✓MA = 178 261 CA	2MA Correct Method and correct values 1CA Correct answer (2)
4.2.1	50% ✓✓A	2A Correct Answer (2)
4.2.2	Range = Maximum – Minimum ✓ M 36 = 92 – A ✓RT A = 92 – 36 = 56 ✓ CA	1M Range concept 1RT Correct values 1CA Answer (3)
4.2.3	62 ✓✓A	2A Correct Answer (2)
4.2.4	$48 = \frac{1124 + 2B}{20}$ ✓MA ✓A 2B = 1124 – 960 $B = \frac{164}{2}$ ✓ M = 82 ✓ CA	1MA Mean concept 1A Adding correct values 1M Dividing by 2 1CA Answer (3)
4.2.5	Median = $\frac{64 + 64}{2}$ ✓ RT ✓ M = 64 ✓A	CA from 4.2.4 1RT Correct values 1M Dividing by 2 1A Correct answer (3)
4.2.6	Probability = $\frac{5}{10}5$ ✓ A ✓ A = $\frac{1}{2}$ ✓ CA	1A Numerator 1A Denominator 1CA Answer (3)

4.2.7		

Intervals	Frequency
50-59	**4**
60-69	**9**
70-79	**2**
80-89	**4**
90-100	**1**

✓A for 4 and 2
✓A for 4 and 1

2A for 4 and 2
2A for 4 and 1



✓A for 2 bars (50-59 and 70-79)
✓A for 2 bars (80-89 and 90-100

2A 2 Correct bars
2A 2 Correct bars

(8)

		[38]