basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

SENIOR CERTIFICATE EXAMINATIONS/
NATIONAL SENIOR CERTIFICATE EXAMINATIONS

MATHEMATICAL LITERACY P1

2021

This question paper consists of 15 pages,
1 answer sheet and an addendum with 3 annexures.

INSTRUCTIONS AND INFORMATION

1. This question paper consists of FIVE questions. Answer ALL the questions.

2. 2.1 Use the ANNEXURES in the ADDENDUM to answer the following questions:

   - ANNEXURE A for QUESTION 2.1
   - ANNEXURE B for QUESTION 4.1
   - ANNEXURE C for QUESTION 5.3

   2.2 Answer QUESTION 2.2.3(a) on the attached ANSWER SHEET.

   2.3 Write your centre number and examination number in the spaces provided on the ANSWER SHEET. Hand in the ANSWER SHEET with your ANSWER BOOK.

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

4. Start EACH question on a NEW page.

5. You may use an approved calculator (non-programmable and non-graphical), unless stated otherwise.

6. Show ALL calculations clearly.

7. Round off ALL final answers appropriately according to the given context, unless stated otherwise.

8. Indicate units of measurement, where applicable.

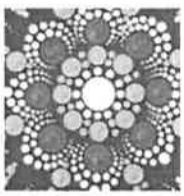
9. Maps and diagrams are NOT necessarily drawn to scale, unless stated otherwise.

10. Write neatly and legibly.

QUESTION 1

1.1 Hobby-X offers workshops where they teach art skills.
The information below shows the different workshops offered by Hobby-X. All prices shown exclude 15% VAT.
The first 10 participants in each of the workshops receives 7,5% discount.

TYPES, DURATION AND COST OF THE WORKSHOPS

Art for Beginners Duration: 90 minutes Cost: R330,00 	**Bunny Bin** Duration: 120 minutes Cost: R220,00 
Cheeseboard Duration: 90 minutes Cost: R110,00 	**Chef's Breadbin** Duration: 150 minutes Cost: R165,00 
Creative Hand Lettering Duration: 90 minutes Cost: R220,00 	**Creative Journaling** Duration: 90 minutes Cost: R275,00 

[Source: www.hobbyx.co.za]

Use the information above to answer the questions that follow.

1.1.1 The diameter of the cheeseboard is 300 mm.

Calculate the radius of the cheeseboard. (2)

1.1.2 Write the cost of the 90-minute workshops in descending order. (2)

1.1.3 Determine the VAT amount charged for the Creative Journaling workshop. (2)

1.1.4 Convert 150 minutes to hours. (2)

1.1.5 Calculate (excluding VAT) the total cost for a person attending all the workshops. (2)

1.1.6 Determine the discount amount offered for the Art for Beginners' workshop. (2)

1.2 Naomi bakes rusks and sells them in 500 g packs, at R55,00 per pack, at one of the workshops.

TABLE 1 below shows the main ingredients of the rusks.

TABLE 1: MAIN INGREDIENTS TO BAKE 4 000 g OF RUSKS

Self-raising flour	1 250 g
Bran flour	5 cups
Raisins or dates	100 g
Butter	500 g

[Adapted from www.food24.com/Recipes-and-Menus/South-African-Recipes]

A rusk is a hard, dry biscuit or twice-baked bread.

Use the information above to answer the questions that follow.

1.2.1 Convert 1 250 grams (g) to kilograms (kg). (2)

1.2.2 Determine the cost price of a 500 g pack if a profit of R30,30 per pack was made. (2)

1.2.3 Write (in simplified form) the ratio of self-raising flour to butter. (2)

1.2.4 Calculate the mass of raisins or dates needed to bake a 500 g pack of rusks. (3)

1.2.5 Calculate the number of cups of bran flour needed if Naomi bakes 8 000 g of rusks. (2)

1.3 The tables below represent the percentage interest that could be earned on your savings at two different banks.

Bank A's interest rate applies for a minimum investment of R100 000 and the rate changes over time.

TABLE 2: INTEREST RATES OF BANK A

NUMBER OF MONTHS	AMOUNT IN RAND	INTEREST RATE (%)
13–18	100 000 +	7,10
19–24	100 000 +	7,20
25–36	100 000 +	7,35
37–48	100 000 +	7,5

Bank B's annual interest rate varies according to the amount invested.

TABLE 3: INTEREST RATE OF BANK B

AMOUNT IN RAND	INTEREST RATE (%)
50 000–99 999	6,7
100 000–249 999	6,8
250 000–499 999	6,85
500 000–999 999	7,49

[Sources: www.capitec.co.za and www.standardbank.co.za]

Use the above information to answer the questions that follow.

1.3.1 Define the term *interest* in the given context. (2)

1.3.2 Write down the minimum number of months that Bank A offers an interest rate of 7,35% (2)

1.3.3 Name which bank offers the better interest rate for an amount of R145 000, invested for 2 years. (2)

1.3.4 Calculate the difference between the highest interest rate of Bank A and the lowest interest rate of Bank B. (3)
[32]

QUESTION 2

2.1

A dental procedure, e.g. a crown implant, is performed by a dentist.

ANNEXURE A shows a quotation for a dental procedure for Ms Mpho Hendricks.

NOTE: A crown is a dental cap which completely covers a tooth.

Use ANNEXURE A to answer the questions that follow.

2.1.1 Write down the name of the dentist who is treating Mpho. (2)

2.1.2 State the year in which Mpho was born. (2)

2.1.3 Write down the amount that Mpho has to pay when the procedure is done. (2)

2.1.4 Calculate the total amount excluding 15% VAT. (3)

2.1.5 Calculate the price of ONE infection control measure. (2)

2.2 Mpho's sister, Anelle, has a vegetable garden. She grows vegetables that are considered useful for tooth growth. She sells mixed vegetable packs at a local market during weekends.

TABLE 4 shows the cost price for growing, processing and packaging the vegetables, as well as the selling price of each pack of mixed vegetables.

TABLE 4: COST PRICE AND SELLING PRICE OF 1 kg MIXED VEGETABLES PACKS

ITEMS	COST PRICE	SELLING PRICE
Mixed vegetable pack (1 kg)	R12,50	R25,00

TABLE 5 shows the monthly fixed cost.

TABLE 5: MONTHLY FIXED COST

ITEM	PRICE
Rent for stall	R140,00
Transport	R60,00

[Adapted from www.healthy-snacks]

Use TABLE 4 and TABLE 5 above to answer the questions that follow.

2.2.1 Calculate Anelle's total monthly fixed cost. (2)

2.2.2 The formula below is used to calculate Anelle's expenses for one month.

Expenses (R) = 200,00 + 12,50 × number of packs

TABLE 6: INCOME AND EXPENDITURE OF 1 kg MIXED VEGETABLE PACKS

Number of packs	0	5	10	**B**	35	40	50
Expenses (R)	200	262,20	**A**	400	637,50	700	825
Income (R)	0	125	250	400	875	1 000	1 250

[Adapted from www.evergreens.co.za]

Use the above formula to calculate the missing values **A** and **B**. (4)

2.2.3 Answer the questions that follow by using TABLE 6 and the graph drawn on the ANSWER SHEET showing the expenses for the mixed vegetable packs.

(a) Use the same grid provided on the ANSWER SHEET to draw another line graph showing the income from the sale of the mixed vegetable packs. (3)

(b) Explain the meaning of the term *break-even* in the given context. (2)

(c) Write down the number of mixed vegetable packs that must be sold to break even. (2)

2.3 Anelle wants to purchase a commercial vegetable slicer to assist with the chopping of the vegetables, as shown in the picture below.
The two payment options she can choose from are also shown below.

PAYMENT OPTION 1: Cash price of R1 799,00. **PAYMENT OPTION 2:** Monthly instalments Deposit: 20% of cash price 24 monthly payments of R95,00	

[Adapted from www.cateringequipment.co.za]

Use the information above to answer the questions that follow.

2.3.1 Anelle is thinking of using Payment Option 2.

(a) Calculate the deposit amount she has to pay. (2)

(b) Determine (rounded to the nearest rand) the total amount Anelle will have paid for the vegetable slicer after 24 months. (4)

2.3.2 Anelle's brother, Tony, who lives in the United States of America, decided to send her money to buy the vegetable slicer using Payment Option 1.

TABLE 7 below shows the exchange rate of South Africa in relation to the currencies of other countries.

TABLE 7: EXCHANGE RATES TABLE ON 6 FEBRUARY 2020

1 ZAR = 0,067251 US dollars ($)	US dollar ($) = ZAR14,86966737
1 ZAR = 0,061147 euros (€)	Euro (€) = ZAR16,35403209
1 ZAR = 0,051856 pounds (£)	Pound (£) = ZAR19,28417155
1 ZAR = 7,386276 yen (¥)	Yen (¥) = ZAR0,1352362217

[Adapted from www.x-rates.com/table]

Use the information and TABLE 7 above to answer the questions that follow.

(a) Explain what the term *exchange rate* means. (2)

(b) Identify the currency that is weaker than the rand. (2)

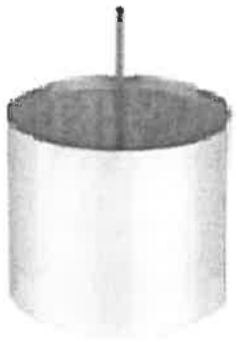
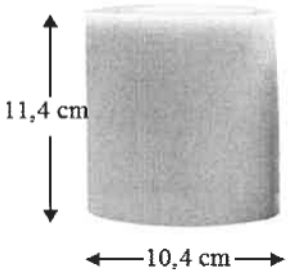
(c) Tony sent Anelle US$130,00.

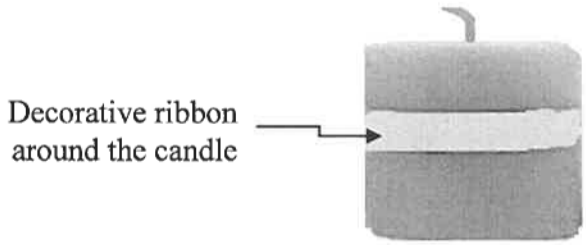
Determine, rounded to the nearest rand, the amount Anelle received from Tony. (3)

[37]

QUESTION 3

3.1 Simphiwe makes candles as shown in the pictures below. He uses a cylindrical mould to make the candles. He also carves horseheads in some of the cylindrical candles.

Candle mould	Cylindrical candle	Horsehead candle
		



[Adapted from www.pinterest.co.za]

Use the pictures above to answer the questions that follow.

3.1.1 Simphiwe will pack 12 cylindrical candles in a box using a 4 by 3 arrangement.

Determine the minimum length and width of the box he needs if the candles are tightly packed, touching each other in the box. (4)

3.1.2 Simphiwe ties a decorative ribbon around the candles. The ribbon has an overlap of 3 cm. Determine the number of candles he will be able to decorate with a 20-metre long ribbon.

You may use the following formula:

Ribbon needed for one candle (cm) = 2 × 3,142 × radius + 3 (5)

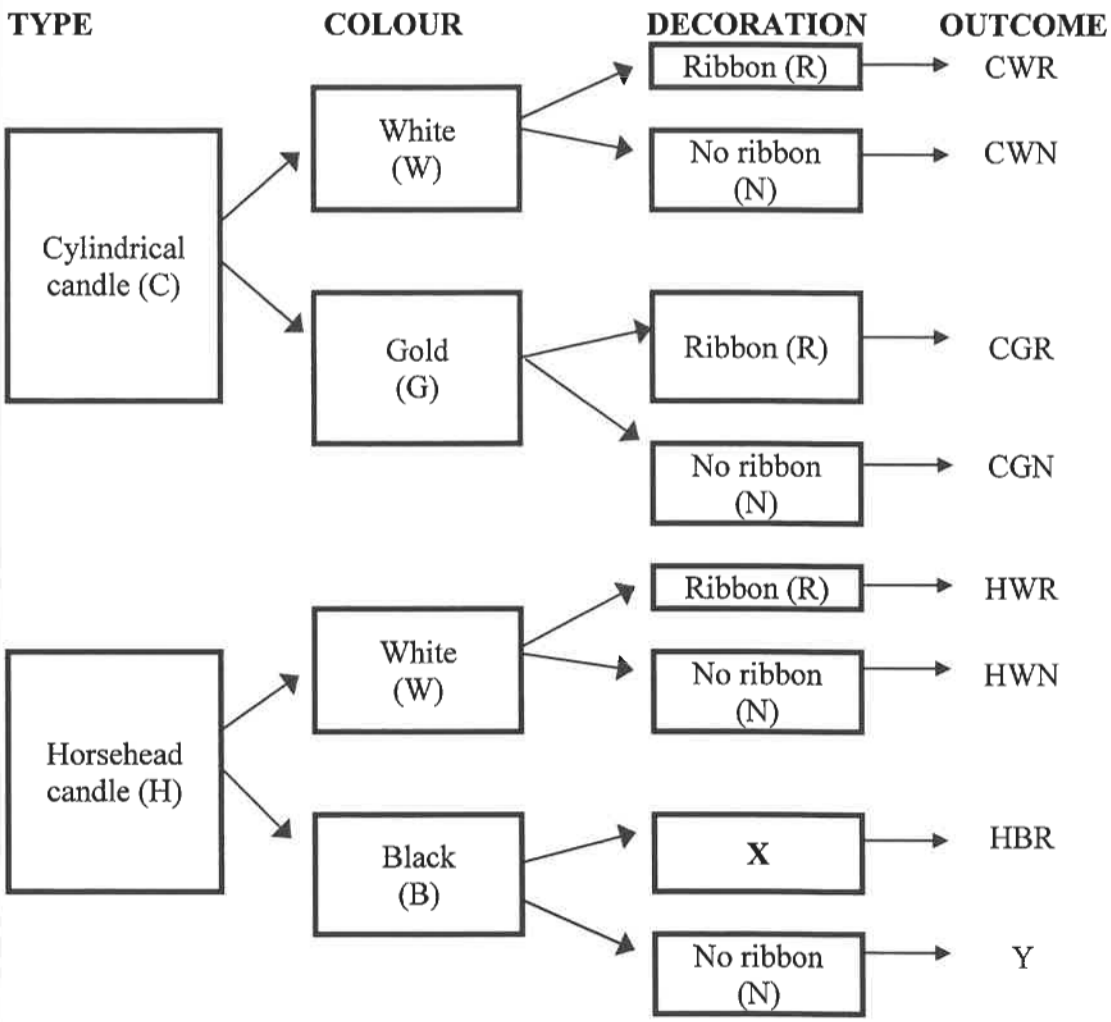
3.1.3 After carving a horsehead in a cylindrical candle, he collected the leftover wax, melted it and poured it in the mould. The leftover melted wax filled up $\frac{1}{3}$ of the mould. Calculate the volume of wax needed for one horsehead candle.

You may use the following formula:

Volume of a cylinder = 3,142 × (radius)^2 × height (4)

3.2 The tree diagram below shows the different options available for the candles that will be sold.

TREE DIAGRAM FOR THE DIFFERENT CANDLE OPTIONS



Use the tree diagram above to answer the questions that follow.

3.2.1 Write down the description for:

(a) X (2)

(b) Y (2)

3.2.2 Write down the probability of buying:

(a) Any candle with a ribbon, as a percentage (3)

(b) A gold horsehead candle, without a ribbon (2)

[22]

QUESTION 4

4.1

Alida is a Grade 12 learner who lives in Grootdrink in the Northern Cape. She intends studying at a university in Bloemfontein. She and her parents plan to attend the university's open day for prospective students.

A map on ANNEXURE B shows a part of the Northern Cape, Free State and surrounding areas.

Use ANNEXURE B to answer the questions that follow.

4.1.1 Write down the general direction from Bloemfontein to Grootdrink. (2)

4.1.2 State the national road they will use to travel to Bloemfontein. (2)

4.1.3 Write down the name of the third town they will pass en route to Bloemfontein. (2)

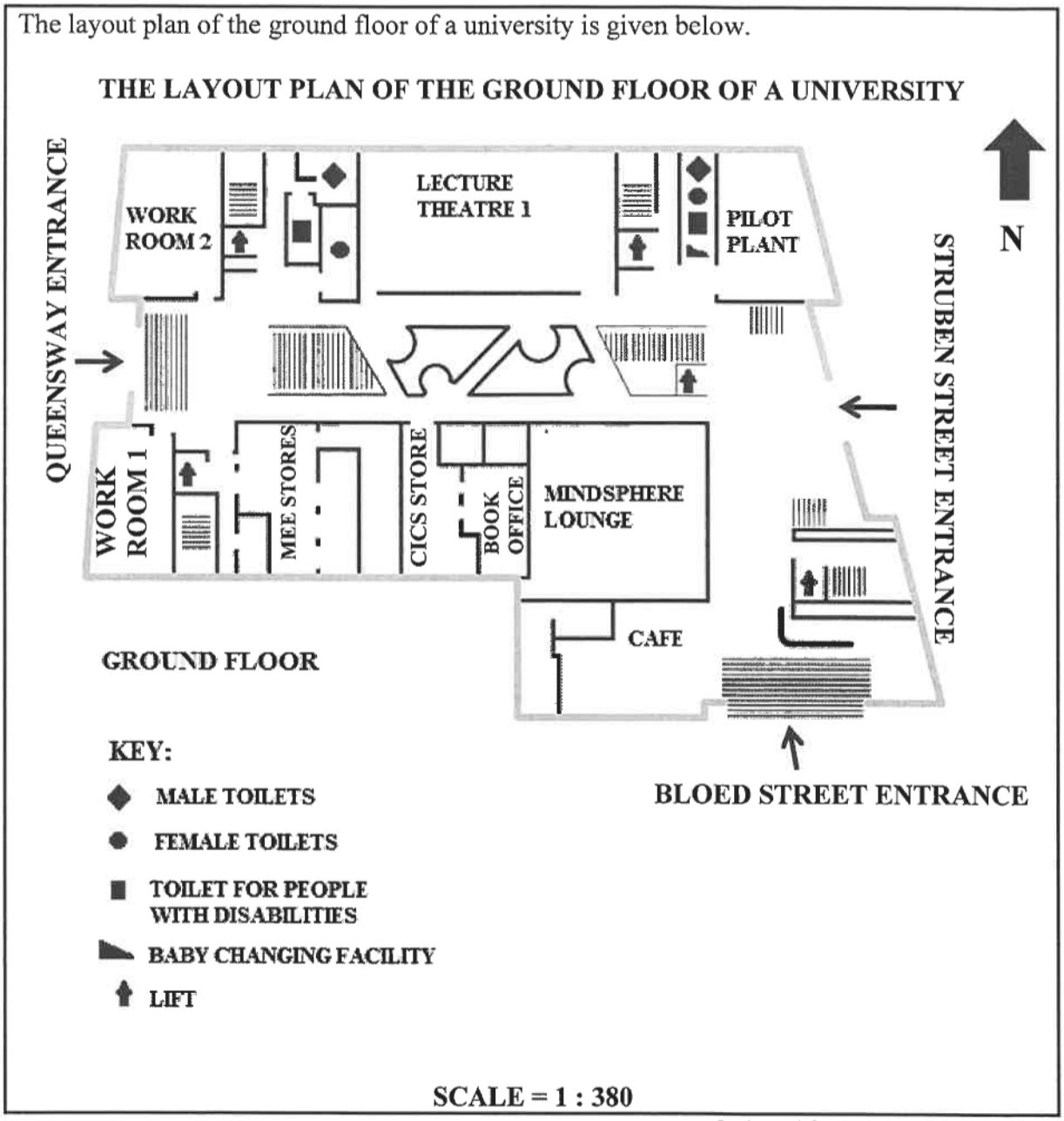
4.1.4 Alida and her parents will leave Grootdrink at 04:00 to travel the distance of 496,9 km to Bloemfontein.

Determine (to the nearest km/h) the average speed they must travel to be in Bloemfontein at 09:30.

You may use the following formula:

$$\textbf{Average speed} = \frac{\textbf{distance}}{\textbf{time}}$$ (4)

4.2 The layout plan of the ground floor of a university is given below.



[Adapted from www.pinterest.com]

Use the layout plan above to answer the questions that follow.

4.2.1 Explain the meaning of the given scale. (2)

4.2.2 Name a feature on the layout plan that indicates that this is a multi-level building. (2)

4.2.3 Determine the number of toilets not suitable for people with disabilities on this layout plan. (2)

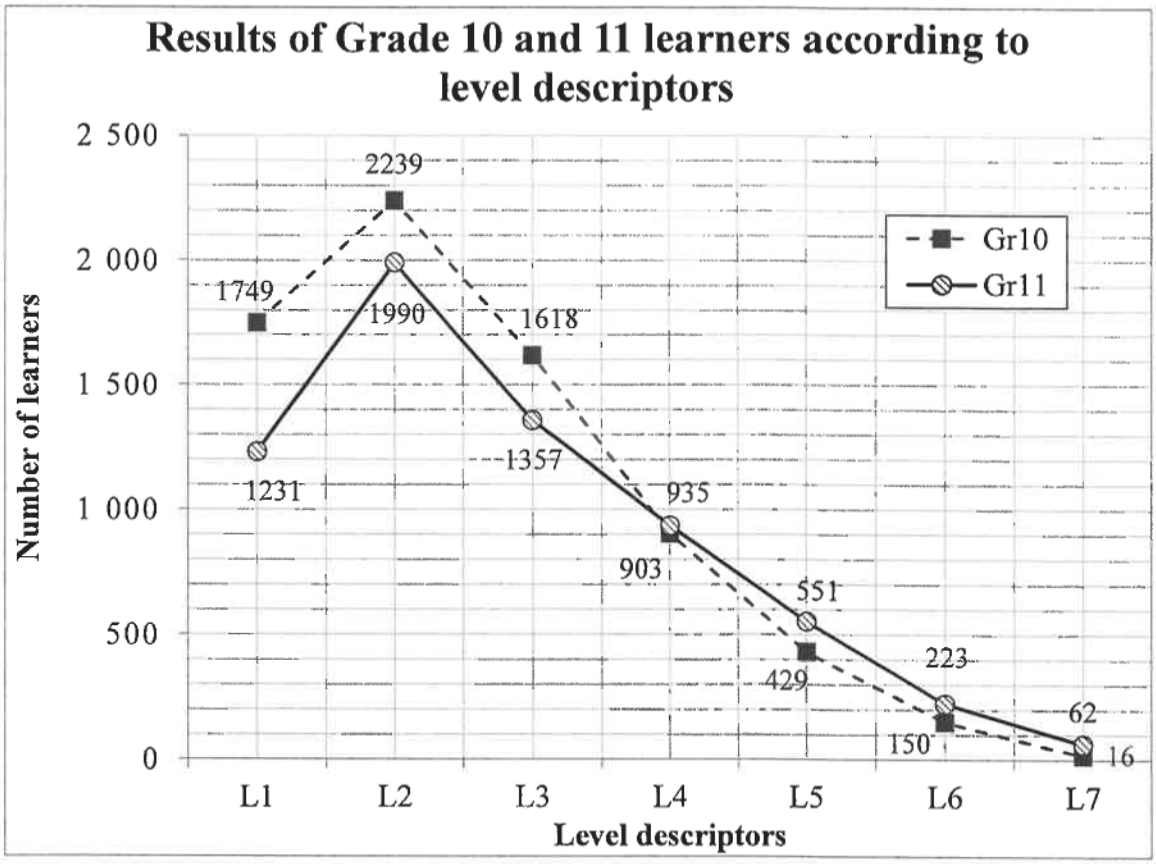
4.2.4 Identify the entrance that will be closest to the cafe. (2)

4.2.5 Measure (in mm) the east-facing wall of the Mindsphere Lounge. (3)

[21]

QUESTION 5

5.1 In South Africa, learners' marks are graded using level descriptors from level 1 (L1), the lowest marks, to level 7 (L7), being the highest mark. The information below shows the November 2019 Mathematical Literacy results for learners in a particular district in South Africa.



[Adapted from www.eduinfosearch.com]

Use the graph above to answer the questions that follow.

5.1.1 Define the term *range*. (2)

5.1.2 Identify the type of graph shown. (2)

5.1.3 State whether the learner numbers represent continuous or discrete data. (2)

5.1.4 Determine the total number of Grade 10 learners who sat for the examinations. (3)

5.1.5 Write down the level descriptors which show that the performance of the Grade 11 learners is below the performance of the Grade 10 learners. (3)

5.1.6 Determine the median level descriptor for the Grade 11 learners. (3)

5.2 The incomplete frequency table below shows the Mathematical Literacy marks of a group of 67 learners.

FREQUENCY TABLE OF THE MATHEMATICAL LITERACY MARKS

INTERVAL As a %	TALLIES	FREQUENCY	CUMULATIVE FREQUENCY
90–100		0	0
80–89	III	3	3
70–79	...	...	...
60–69	𝍸 𝍸 II	12	21
50–59	𝍸 II	7	28
40–49	𝍸 𝍸 𝍸	15	43
30–39	𝍸 𝍸 𝍸 II	17	60
20–29	IIII	4	64
10–19	II	2	66
0–9	I	1	67

Use the frequency table above to answer the questions that follow.

5.2.1 Complete the tally for the 70–79% interval. (2)

5.2.2 Write down the frequency for the 70–79% interval. (2)

5.2.3 Show, by means of calculations, how the cumulative frequency for the 30–39% interval was determined. (2)

5.3 The graph on ANNEXURE C shows the number of candidates who sat for the NSC Examinations in Mathematics, Technical Mathematics and Mathematical Literacy for the period 2014 to 2019.

Use the graph on ANNEXURE C to answer the questions that follow.

5.3.1 Name the type of graph given in ANNEXURE C. (2)

5.3.2 Write down, in words, the number of learners who sat for the Mathematical Literacy examination in 2018. (2)

5.3.3 Determine how many more learners sat for Mathematical Literacy than for Mathematics and Technical Mathematics combined in 2019. (3)

5.3.4 Calculate the mean number of learners doing Mathematics over the period shown. (3)

5.3.5 Determine the range of the Mathematical Literacy learners over the period shown. (2)

5.3.6 The total number of candidates doing the examinations in the three subjects in 2019 was 530 311.

Calculate (rounded to ONE decimal place) the difference in the percentage of learners doing Mathematics instead of Mathematical Literacy in South Africa. (5)
[38]

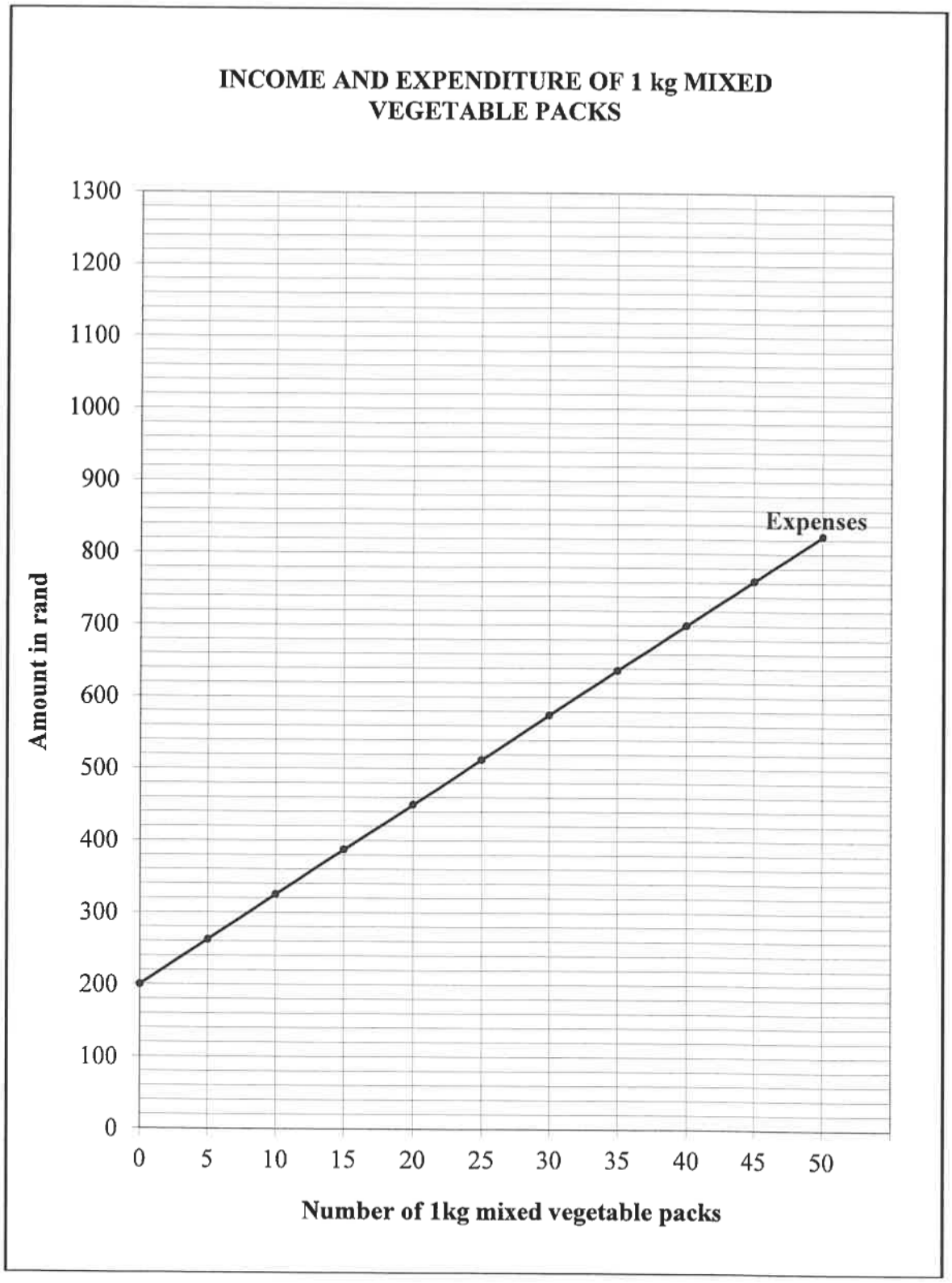
TOTAL: 150

ANSWER SHEET

QUESTION 2.2.3(a)

CENTRE NUMBER:

EXAMINATION NUMBER:



basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

SENIOR CERTIFICATE EXAMINATIONS/
NATIONAL SENIOR CERTIFICATE EXAMINATIONS

MATHEMATICAL LITERACY P1

ADDENDUM

2021

This addendum consists of 4 pages with 3 annexures.

ANNEXURE A

QUESTION 2.1

QUOTATION FOR DENTAL PROCEDURE

ABC Medical Centre Practice number: 2458793 Corner of Bolt and Louw Streets, Kimberley, 8301 Tel.: 053 839 6322 E-mail: admin@dutoit.co.za

Date: 15-01-2020 Procedure: Crown Dentist: Dr JJ Ndlovu	
Ms Mpho Hendricks Acc. No.: 000128966 ID: 821213 0045 071 Cell: 066 468 0206	Med. Aid: GEMS (00897588) Member No.: 00897588 Dep. No.: 00

Code	Description	ICD-10	Tooth	Qty	Amount
8018	Infection control measure	K02.9		2	R40,55
8220	Sterilised instrumentation	K02.9		1	R56,20
8145	Local anaesthetics – per visit	K02.9		1	R89,10
8114	Crown	K02.9	12	1	R1 588,90
	SUBTOTAL				R1 744,75
	TOTAL (including 15% VAT)				R1 744,75

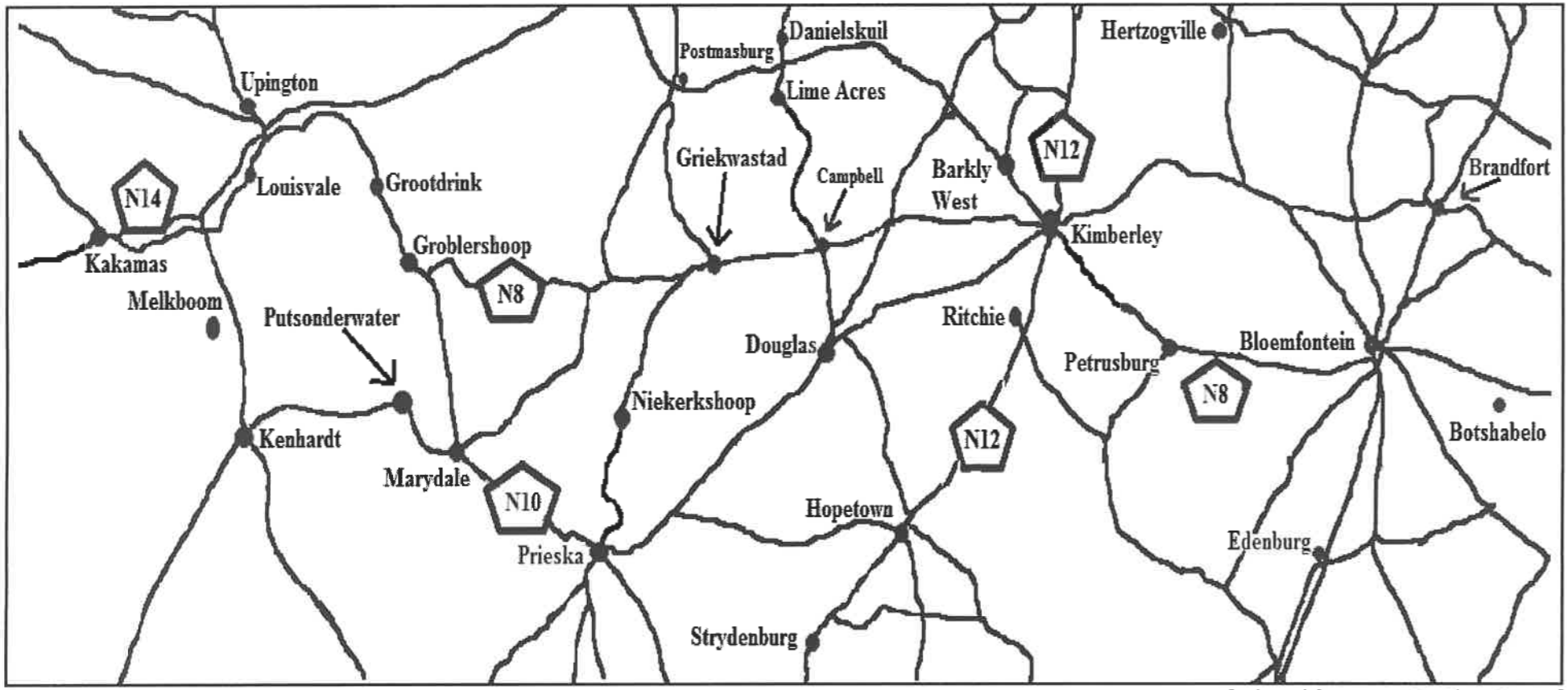
Summary	
	Amount
Medical Aid Payment	R1 744,75
Patient Payment	R0,00

[Adapted from an actual quotation for a dental procedure]

ANNEXURE B

QUESTION 4.1

MAP OF A PART OF THE NORTHERN CAPE, FREE STATE AND SURROUNDING AREAS

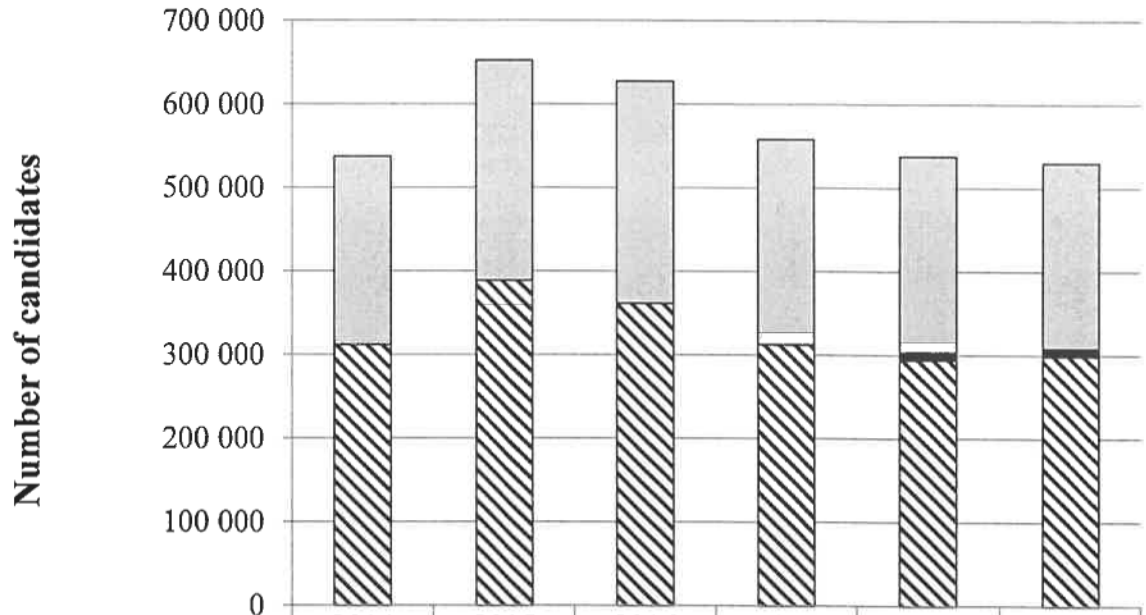


[Adapted from www.googlemaps.com]

ANNEXURE C

QUESTION 5.3

Number of candidates who sat for Mathematics, Technical Mathematics and Mathematical Literacy from 2014 to 2019



	2014	2015	2016	2017	2018	2019
Mathematics	225458	263903	265810	245103	233858	222034
Technical Mathematics					10025	9670
Mathematical Literacy	312054	388845	361865	313030	294202	298607

[Adapted from www.dbe.co.za]

basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

SENIOR CERTIFICATE EXAMINATION/
NATIONAL SENIOR CERTIFICATE EXAMINATION
SENIORSERTIFIKAAT-EKSAMEN/NASIONALE SENIORSERTIFIKAAT-EKSAMEN

MATHEMATICAL LITERACY P1/*WISKUNDIGE GELETTERDHEID V1*

MAY-JUNE 2021

MARKING GUIDELINES/*NASIENRIGLYNE*

MARKS/*PUNTE*: 150

Symbol/*Kode*	Explanation/*Verduideliking*
M	Method/*Metode*
MA	Method with accuracy/*Metode met akkuraatheid*
CA	Consistent accuracy/*Volgehoue akkuraatheid*
A	Accuracy/*Akkuraatheid*
C	Conversion/*Herleiding*
S	Simplification/*Vereenvoudiging*
RT	Reading from a table/graph/document/diagram/*Lees vanaf tabel/grafiek/dokument/diagram*
SF	Correct substitution in a formula/*Korrekte vervanging in 'n formule*
O	Opinion/Explanation/*Opinie/Verduideliking*
P	Penalty, e.g. for no units, incorrect rounding off, etc./*Penalisasie, bv. vir geen eenhede, verkeerde afronding, ens.*
R	Rounding off/*Afronding*
NPR	No penalty for rounding/*Geen penalisasie vir afronding nie*
AO	Answer only/*Slegs antwoord*
MCA	Method with consistent accuracy/*Metode met volgehoue akkuraatheid*

This marking guideline consists of 15 pages
Hierdie nasienriglyne bestaan uit 15 bladsye.

NOTE:
- If a candidate answers a question TWICE, only mark the FIRST attempt.
- If a candidate has crossed out (cancelled) an attempt to a question and NOT redone the solution, mark the crossed out (cancelled) version.
- Consistent accuracy (CA) applies in ALL aspects of the marking guidelines; however, it stops at the second calculation error.
- If the candidate presents any extra solution when reading from a graph, table, layout plan and map, then penalise for every extra item presented.
- General principle of marking, if the candidate makes one mistake he loses one mark.

LET WEL:
- *As 'n kandidaat 'n vraag TWEE KEER beantwoord, sien slegs die EERSTE poging na.*
- *As 'n kandidaat 'n antwoord van 'n vraag doodtrek (kanselleer) en nie oordoen nie, sien die doodgetrekte (gekanselleerde) poging na.*
- *Volgehoue akkuraatheid (CA) word in ALLE aspekte van die nasienriglyne toegepas, dit hou op by die tweede berekeningsfout.*
- *Wanneer 'n kandidaat aflesings vanaf 'n grafiek, tabel, uitlegplan en kaart geneem en ekstra antwoorde gee, penaliseer vir elke ekstra item.*
- *Die algemene beginsel van merk as 'n leerder een fout maak verloor hy een punt.*

QUESTION/*VRAAG* 1 [32 MARKS/*PUNTE*] ANSWER ONLY FULL MARKS			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T&L**
1.1.1	Radius/*Radius* = 300 mm ÷ 2 ✓MA = 150 mm **OR/*OF*** 15 cm ✓A	1MA dividing by 2 1A simplify (2)	M L1
1.1.2	✓RT R330,00; R275,00; R220,00; R110,00 ✓CA	1RT reading all the values 1CA correct order (2)	F L1
1.1.3	VAT/*BTW* = R275,00 × 15% ✓MA = R41,25 ✓A **OR/*OF*** Price including VAT/*Prys BTW ingesluit* = R275 × 1,15 = R316,25 ✓MA VAT = R316,25 – R275 = R41,25 ✓A	1MA multiplying by 15% 1A simplify **OR/*OF*** 1MA calculating VAT 1A simplify (2)	F L1
1.1.4	150 ÷ 60 ✓A = 2,5 **OR/*OF*** $2\frac{1}{2}$ hours/*uur* ✓A	1A divide by 60 1A 2,5 hours (2)	M L1

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
1.1.5	Total cost/*Totale Koste* ✓MA = R330,00 + R275,00 + R220,00 + R220,00 + R165,00 + R110,00 = R1 320 ✓MCA	1MA adding all correct values 1MCA simplify (at least 5 correct values) (2)	F L1
1.1.6	Discount/ *Afslag* = R330,00 × 7,5% ✓MA = R24,75 ✓A	1MA multiplying by 7,5% 1A simplification (2)	F L1
1.2.1	$\frac{1\ 250\ g}{1\ 000}$ ✓MA = 1,25 kg ✓A	1MA dividing by 1 000 1A simplification (2)	M L1
1.2.2	Cost Price/*Kosprys* = R55,00 – R30,30 ✓MA = R24,70 ✓A	1MA subtracting correct values in the correct order 1A simplification (2)	F L1
1.2.3	1 250 : 500 ✓MA 5 : 2 **OR/*OF*** 2,5 : 1 **OR/*OF*** 1: 0,4 ✓CA	1MA values in correct order 1CA simplified form (2)	M L1
1.2.4	Number of packets/*Aantal pakkies* $\frac{4\ 000\ g}{500\ g} = 8$ ✓A Mass/*Massa* $\frac{100\,g}{8}$ ✓MA = 12,5 g ✓CA **OR/*OF*** Mass/*Massa* ✓MA $\frac{500\,g \times 100\,g}{4\ 000\,g}$ ✓A $= 12{,}5g$ ✓CA	1A number of 500g packs 1MA dividing 100 g by 8 1CA simplification **OR/*OF*** 1MA number of 500g packs 1A dividing 4 000 g 1CA simplification	M L1

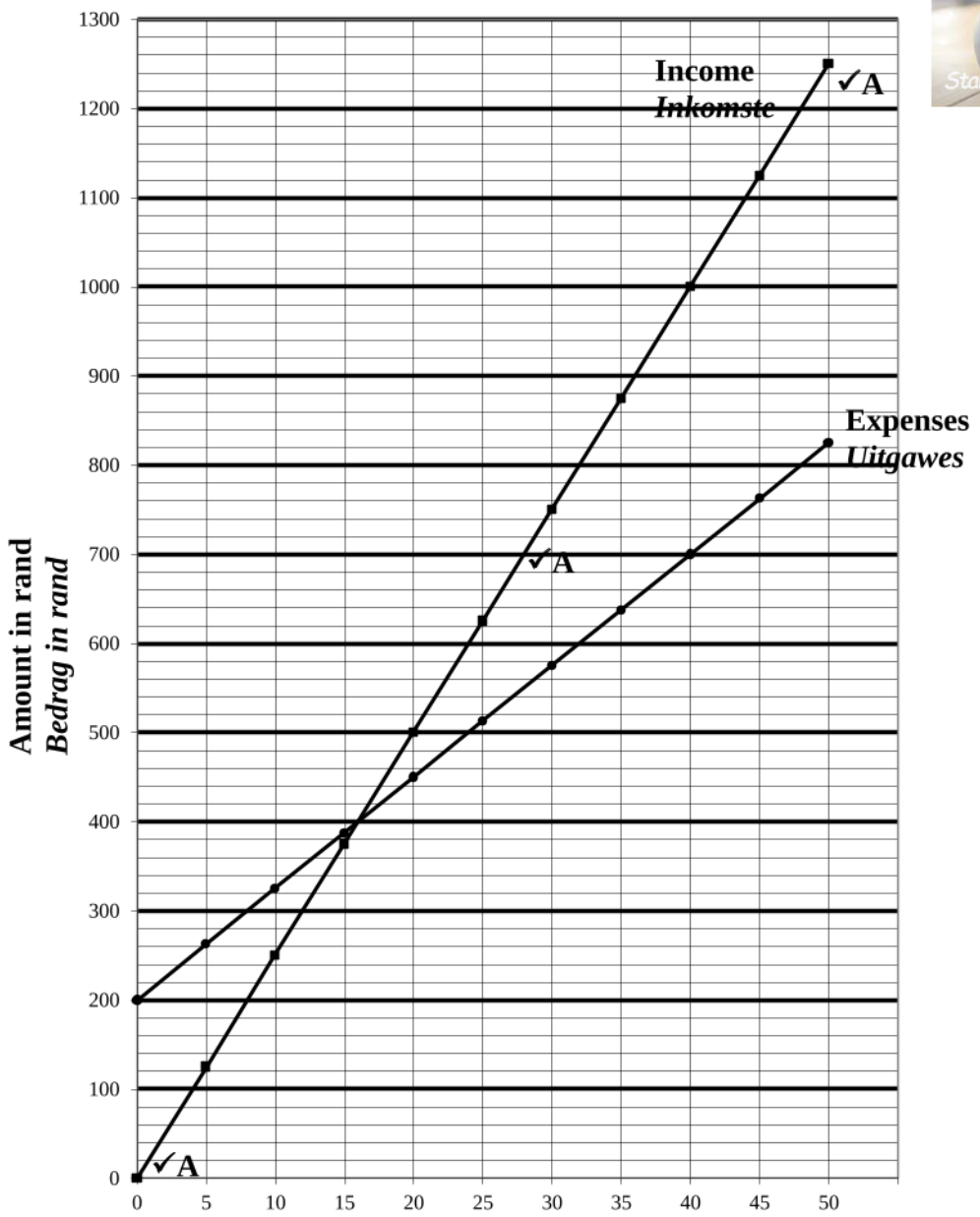
Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
	OR/*OF*	**OR/*OF***	
	4000 g : 100 g ✓MA 500 g : mass of raisins/*massa van rosyntjies* $\text{Mass of raisins} = \frac{50\,000\,\text{g}}{4\,000}$ ✓A Mass of raisins/*Massa van rosyntjies* = 12,5 g ✓CA	1MA correct ratio concept 1A dividing 4 000 g 1CA simplification (3)	
1.2.5	Number of cups/*aantal koppies* ✓MA = 2 × 5 = 10 ✓A **OR/*OF*** 4 000 : 5 ✓MA 8 000 : 10 ∴ The number of cups = 10 ✓A	1MA multiply by 2 and 5 1A simplification **OR/*OF*** 1MA correct ratio 1A simplification (2)	M L1
1.3.1	Money earned on an investment/ *Geld verdien op 'n belegging*. ✓✓A	2A definition (2)	F L1
1.3.2	25 months/*maande* ✓✓A	2A correct number of months (2)	M L1
1.3.3	Bank A ✓✓A	2A correct bank (2)	F L1
1.3.4	Difference/*Verskil* ✓RT ✓RT 7,50% − 6,7% = 0,8% ✓CA	1RT correct value from tables 1RT correct value from tables 1CA simplification (one value must be correct) (3)	F L1
		[32]	

QUESTION/*VRAAG* 2 [37 MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T&L**
2.1.1	Dr. JJ Ndlovu ✓✓A	2A correct name (2)	F L1
2.1.2	Year of birth/*Geboortejaar* 1982 / '82 ✓✓RT	 2RT reading from table (2)	F L1
2.1.3	R0,00/nothing/*niks* ✓✓A	2A correct amount (2)	F L1
2.1.4	Amount excluding VAT/*Bedrag BTW uitgesluit* R1 744,75 ÷ $\frac{115}{100}$ **OR/*OF*** × $\frac{100}{115}$ ✓A R1 744,75 ÷ 1,15 ✓M = R1 517,17 ✓CA **OR/*OF*** VAT amount/*BTW bedrag* R1744,75 × $\frac{15}{115}$ = R227,58 ✓A Amount excluding VAT/*Bedrag BTW uitgesluit* = R1 744,75 – R227,58 ✓M = R 1 517,17 ✓CA	 1A $\frac{115}{100}$ **OR** $\frac{100}{115}$ 1M ÷$\frac{115}{100}$ **OR** × $\frac{100}{115}$ 1CA simplification **OR/*OF*** 1A amount VAT 1M subtracting VAT 1CA simplification (3)	F L2
2.1.5	One infection control /*Een infeksiebeheer* =R40,55 ÷ 2 ✓MA = R20,28 ✓A	 1MA divide by 2 1A simplification **NPR** **AO** (2)	F L1
2.2.1	Total fixed cost/*Totale vaste koste* = R140,00 + R60,00 ✓RT = R200,00 ✓CA	 1RT correct values 1CA simplification (one value must be correct) (2)	F L1

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
2.2.2	Expenses/*Uitgawes* Expenses (**A**) = R200,00 + R12,50 × number of packets **A** = R200,00 + R12,50 × 10 ✓SF **A** = R200,00 + R125,00 = R325,00 ✓A **B** = 400 ÷ 25 ✓SF = 16 ✓A **OR/*OF*** **B** = (400 – 200) ÷ 12,5 ✓SF = 16 ✓A	 1SF correct substitution 1A simplification 1SF correct substitution 1A simplification **AO** (4)	F L2

Q/V	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
2.2.3 (a)			F L2

INCOME AND EXPENDITURE OF 1 kg OF MIXED VEGETABLE PACKS
INKOMSTE EN UITGAWES VAN 1 kg GEMENGDEGROENTE-PAKKE



1A starting point (0; 0)
1A endpoint (50; 1 250)
1A straight line (must be joining at least 3 points stated in the table; **CA for using B**)

(3)

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
2.2.3 (b)	Where the cost price of mixed vegetable packs equals the selling price of the packs/*Waar die kosprys van 'n pak groente gelyk is aan die verkoopprys van die pak groente.*	2A explanation (2)	F L1
2.2.3 (c)	16 packs/*pakke* ✓✓A	**CA from Q2.2.2 / 2.2.3 (a)** 2A correct number of packs (2)	F L1
2.3.1 (a)	Deposit/*Deposito* R1 799,00 × $\frac{20}{100}$ ✓MA = R359,80 ✓A	1MA calculating 20% 1A simplification (2)	F L1
2.3.1 (b)	Total amount/*Totale bedrag* ✓MA = R359,80 + (24 × R95,00) = R359,80 + R2 280,00 ✓MCA = R2 639,80 ✓CA = R2 640,00 ✓R	**CA from Question 2.3.1(a)** 1MA multiplying by 24 1MCA adding the deposit 1CA simplification 1R to the nearest rand (4)	F L2
2.3.2 (a)	✓A ✓A The value of one currency relative to the value of another currency/*Die waarde van een geldeenheid relatief tot die waarde van 'n ander geldeenheid.*	1A value of one currency 1A relative to the value of another currency (2)	F L1
2.3.2 (b)	✓✓A ✓✓A yen / jen / ¥ **OR/*OF*** Japanese yen / *Japanese jen*	2A correct currency (2)	F L1
2.3.2 (c)	1 ZAR = 0,067251 dollar ($) ✓RT $\frac{\$130}{\$0,067251}$ × R1 ✓C = R1 933,056758 = R1 933,00 ✓R **OR/*OF*** Dollar ($) = ZAR14,86966737 ✓RT $\frac{\$130}{\$1}$ × R14,86966737 ✓C = R1 933,056758 = R1 933,00 ✓R	1RT exchange rate 1C conversion 1R correct rounding **OR/*OF*** 1RT exchange rate 1C conversion 1R correct rounding (3)	F L2
		[37]	

QUESTION/*VRAAG* 3 [22 MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T&L**
3.1.1	Width/*breedte* = 3 × 10,4 cm ✓MA = 31,2 cm ✓A Length/*Lengte* = 4 × 10,4 cm ✓MA = 41,6 cm ✓A	1MA for multiplying diameter by 3 1A simplification 1MA for multiplying diameter by 4 1A simplification (4)	M L1
3.1.2	Ribbon needed for one candle (cm) *Lint benodig vir een kers (cm)* = 2 × 3,142 × radius + 3 cm = 2 × 3,142 × 5,2 cm + 3 cm ✓SF = 35,6768 cm ✓A 20 × 100 = 2 000 cm ✓C Number of candles/*Aantal kerse* 2 000 cm ÷ 35,6768 cm ✓MCA = 56, 05883936 = 56 candles/*kerse* ✓R	1SF correct substitution (radius) 1A length for 1 candle 1C conversion 1MCA dividing by length of ribbon 1R correct number of candles Accept 55 candles if rounded earlier (5)	M L3
3.1.3	Volume = 3,142 × (5,2cm)^2 × 11,4cm ✓SF = 968,54 cm^3 ✓CA Volume of horsehead/*Volume van kers met perd* $= \frac{2}{3} \times \frac{968,54}{1}$ cm^3 ✓MCA = 645,69 cm^3 ✓CA **OR/*OF*** ✓✓CA $\frac{968,54}{3}$ = 322,84666 × 2 ✓MCA = 645,69 cm^3 ✓CA	**CA from Question 3.1.2** 1SF substituting correct values 1CA answer in cm^3 1MCA multiply by 2 and dividing by 3 1CA simplification **OR/*OF*** 2CA answer in cm^3 1MCA multiply by 2 and dividing by 3 1CA simplification	M L2

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
3.1.3	**OR/*OF*** Volume = $3{,}142 \times (5{,}2)^2 \times 11{,}4$ cm ✓SF $= 968{,}54$ cm^3 ✓CA Volume of horsehead = $968{,}54$ cm^3 - $\frac{1}{3}(968{,}54$ cm$^3)$ $= 968{,}54 - 322{,}85$ ✓MCA $= 645{,}69$cm^3 ✓CA	**OR/*OF*** 1SF substituting correct values 1CA answer in cm^3 1MCA subtracting 1CA simplification (4)	
3.2.1 (a)	Ribbon/*Lint* **OR/*OF*** R/*L* ✓✓A	2A ribbon (2)	P L1
3.2.1 (b)	HBN /*PSG* ✓✓A	2A HBN/*PSG* (2)	P L1
3.2.2 (a)	$P_{[\text{candle with ribbon/ } kers \text{ met } lint]} = \frac{1}{2} \times \frac{100}{1}\%$ ✓A ✓M **OR/*OF*** $\frac{4}{8} \times \frac{100}{1}\%$ ✓A ✓M $= 50\%$ ✓CA $= 50\%$ ✓CA	1A fraction 1M concept of percentage 1CA for percentage **AO** (3)	P L2
3.2.2 (b)	P/*W* $P_{[\text{Gold horsehead candle / } Goue\ perdekop\ kers]} = 0$ ✓✓A **OR/*OF*** Impossible/ Onmoontlik / $\frac{0}{8}$ / 0% / 0,0 ✓✓A	2A correct probability (2)	P L2
		[22]	

QUESTION/*VRAAG* 4 [21 MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T&L**
4.1.1	North West / NW *Noord-wes/ NW* ✓✓RT	2RT reading from map (2)	MP L1
4.1.2	N8 ✓✓RT	2RT N8 (2)	MP L1
4.1.3	Campbell ✓✓RT	2RT town (2)	MP L1
4.1.4	04:00 – 09:30 = 5 hours 30 min / 5,5 hours/*ure* ✓A Average Speed /*Gemiddelde spoed* $= \frac{496,9}{5,5}$ ✓MCA = 90,3454545 km/h ✓CA = 90 km/h ✓R	1A calculating 5,5 hours 1MCA dividing correct values in correct order 1CA simplification 1R rounding (4)	MP L2

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
4.2.1	1 unit on the plan represents 380 units in real life./ *1 eenheid op die plan verteenwoordig 380 eenhede in werklikheid.* ✓✓A	2A explanation (2)	MP L1
4.2.2	Lifts/*Hysbakke* ✓✓A **OR/*OF*** Ground Floor/*Grondvloer* ✓✓A **OR/*OF*** Stairs/*Trappe* ✓✓A	2A lifts (2)	MP L1
4.2.3	4 ✓✓A	2A correct value Accept 2 (2)	MP L1
4.2.4	Bloed street entrance/*Bloedstraat-ingang* ✓✓RT **OR/*OF*** South entrance/*Suidelike ingang* ✓✓RT	2RT correct entrance (2)	MP L1
4.2.5	27 mm ✓✓✓A	2A for correct measurement 1A correct wall (Accept 26 – 28 mm) (3)	MP L1
		[21]	

QUESTION/*VRAAG* 5 [38 MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T&L**
5.1.1	Range is the difference between the highest/maximum value and the lowest/minimum value in a data set. ✓✓A *Omvang is die verskil tussen die hoogste/maksimum waarde en die kleinste/minumum waarde in 'n dataversameling.*	2A correct definition (2)	D L1
5.1.2	Line graph/*Lyngrafiek* **OR/*OF*** ✓✓A Broken line graph/*Gebrokelyn grafiek*	2A correct graph (2)	D L1
5.1.3	Discrete data/*Diskrete data* ✓✓A	2A discrete (2)	D L1
5.1.4	✓M 1 749 + 2 239 + 1 618 + 903 + 429 +150 + 16 ✓RT = 7 104 ✓CA	1RT correct values 1M adding ALL values 1CA simplification (at least 6 values correct) Accept 7 136 = full marks **AO** (3)	D L1
5.1.5	L2 ✓✓✓RT	3RT correct level (3)	D L1
5.1.6	Median level descriptor/*Mediaanvlakbeskrywer* ✓CA = 62; 223; 551; **935** 1 231; 1 357; 1 990 ✓MCA L4 ✓CA **OR/*OF*** ✓MCA L2 : L3 ; L1 ; L4 ; L5 ; L6 , L7 ✓CA Median level/*Mediaanvlak* = L4 ✓CA	**CA from Question 5.1.4** 1MCA arranging in order 1CA correct median 1CA level descriptor **OR/*OF*** 1MCA arranging 1CA correct order 1CA level descriptor **AO** (3)	D L3

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
5.2.1	𝍸 I ✓✓A	2A correct tally (2)	D L1
5.2.2	6 ✓✓CA	**CA from Question 5.2.1** 2CA correct frequency (2)	D L1
5.2.3	✓RT 43 + 17 = 60 ✓MA **OR/*OF*** ✓RT ✓MA 0 + 3 + 6 + 12 + 7 + 15 + 17 = 60	1RT correct values 1MA simplification **OR/*OF*** 1RT correct values 1MA simplification (2)	D L1
5.3.1	✓A ✓A Stacked bar graph/*Stapel staafgrafiek*	1A stacked 1A bar graph (2)	D L1
5.3.2	✓A ✓A Two hundered and ninety four thousand two hundred and two/ *Twee honderd vier en negentig duisend twee honderd en twee.*	1A first part of wording 1A second part of wording (2)	D L1
5.3.3	✓RT 298 607 – 222 034 – 9 670 ✓M = 66 903 ✓CA	1RT correct values 1M subtracting 1CA simplification (two values must be correct) **AO** (3)	D L2
5.3.4	Mean/*Gemiddelde* ✓RT $\frac{225458 + 263903 + 265810 + 245103 + 233858 + 222034}{6}$ ✓M = 242 694,33 ✓CA	1RT correct values 1M concept of mean 1CA simplification **NPR** (3)	D L2
5.3.5	Range/*Omvang* 388 845 – 294 202 ✓MA = 94 643 ✓CA	1MA concept of range 1CA simplification (one value must be correct) (2)	D L2

5.3.6	% for Mathematics/*% vir Wiskunde* ✓RT $=\frac{222034}{530311}\times\frac{100}{1}$ ✓MA 41,8686% ✓CA % for Mathematical Literacy/*% vir Wiskundige Geletterdheid* $\frac{298607}{530311}\times\frac{100}{1}$ 56,3079% ✓CA 56,3079% − 41,8686% = 14,4 % ✓CA **OR/*OF*** ✓RT ✓M $\frac{298\,607 - 222\,034}{530\,311}$ ✓CA × 100 ✓MA = 14,4% ✓CA	1RT correct values 1MA percentage calculation 1CA simplification 1CA simplification 1CA simplification with correct rounding **OR/*OF*** 1RT correct values 1M subtracting values 1CA correct denominator 1MA percentage calculation 1CA simplification with correct rounding (5)	D L2
		[38]	
		TOTAL/*TOTAAL*: 150	