basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

SENIOR CERTIFICATE/ NATIONAL SENIOR CERTIFICATE

GRADE 12

MATHEMATICAL LITERACY P2

NOVEMBER 2020

MARKS: 150

TIME: 3 hours

This question paper consists of 10 pages,
1 answer sheet and an addendum with 4 annexures.

INSTRUCTIONS AND INFORMATION

1. This question paper consists of FOUR 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 2.2
   - ANNEXURE C for QUESTION 3.2
   - ANNEXURE D for QUESTION 4.1

   2.2 Answer QUESTION 4.2 on the attached ANSWER SHEET.

   2.3 Write your centre number and examination number in the spaces 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 Lindiwe is interested in early childhood education. She researched the number of learners enrolled in early childhood education in selected countries.

TABLE 1 shows the number of learners that were enrolled in early childhood education in selected countries.

TABLE 1: NUMBER OF LEARNERS ENROLLED IN EARLY CHILDHOOD EDUCATION BY COUNTRY FROM 2014 TO 2016

COUNTRY	2014	2015	2016
Bulgaria	240 622	241 123	232 025
Denmark	300 278	291 683	284 655
Germany	2 970 436	3 014 046	3 090 459
Ireland	78 056	71 096	82 245
Greece	231 155	225 596	214 109
Cyprus	N	29 669	30 505
Slovenia	83 700	84 750	85 407
Serbia	189 304	192 005	199 790
Turkey	1 064 190	1 158 826	1 221 165
Slovakia	158 195	161 906	163 740
United Kingdom	1 596 803	2 035 420	2 248 162
	-	-	-

[Adapted from appso.eurostat.ec/Europa.eu]

Use TABLE 1 to answer the questions that follow.

1.1.1 Determine the difference in the number of learners enrolled in Slovakia in 2015 and 2016. (3)

1.1.2 The range of the number of learners enrolled for 2014 is 2 947 664.

Calculate the value of **N** which represents the lowest number of learners enrolled for 2014. (3)

1.1.3 Describe the trend shown by the number of learners enrolled in Greece. (2)

1.1.4 Determine whether Turkey or the United Kingdom had the largest percentage increase from 2014 to 2016 regarding the number of learners enrolled in early childhood education. Show ALL your calculations. (6)

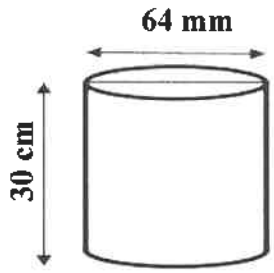
1.1.5 Determine (as a decimal fraction) the probability of randomly selecting a country in this table which shows a decline in enrolment from 2015 to 2016. (3)

1.1.6 The cost per child for early childhood education in Denmark in 2016 was €520,83 per month, while the comparative cost in Slovenia was €350 per month.

Lindiwe stated that the ratio of the total amount spent for all the learners enrolled in 2016 in Denmark compared to Slovenia is more than 5 : 1.

Verify her statement. (6)

1.2 Lindiwe bought two bags of dirty marbles from her neighbour at R30,00 per bag. Each bag contained 100 marbles. She intends to wash the marbles before selling them to her friends at school. She uses a cylindrical container to wash the marbles in, as shown in the diagram below.

DIAGRAM OF A CYLINDRICAL CONTAINER	BAG OF MARBLES
 (Not drawn to scale)	
Inner diameter = 64 mm **Inner height = 30 cm**	**Volume of a single marble = 2 cm^3**

You may use the following formulae:

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

Circumference of a circle = 3,142 × diameter

NOTE: 1 000 cm^3 = 1 litre

Use the above information to answer the questions that follow.

1.2.1 Lindiwe made a profit of 120% from selling one bag of marbles.

Calculate, in rand, the selling price of EACH marble. (4)

1.2.2 To wash the marbles, Lindiwe placed all the marbles from both bags into the cylindrical container. She then filled the container with water.

Lindiwe stated that more than half a litre of water was required to fill the cylindrical container with the marbles already inside it.

Verify, showing ALL calculations, whether the statement is valid. (9)

1.2.3 Calculate, in cm, the outer circumference of the cylindrical container used to wash the marbles if the container is made of metal 0,5 mm thick. (3)

[39]

QUESTION 2

2.1 After an examination, a total of 2 808 Mathematical Literacy scripts were marked at a particular marking centre.

TABLE 2 in ANNEXURE A shows data about the marking team, hours worked, tariffs and the amounts claimed for the marking and moderation of these scripts.

The marking process was planned as follows:

- The first day of marking was a Monday, starting at 14:00.
- Thereafter marking started at 08:00 and ended at 20:00 on a full marking day.
- Paid working hours excluded tea, lunch and supper breaks.

The marking team was paid a travel allowance of R3,26 per km for a total of 11 542 km travelled.

TABLE 3 below shows the times for actual marking and breaks for a full day.

TABLE 3: TIMES FOR ACTUAL MARKING AND BREAKS

START	TEA 1	LUNCH	TEA 2	SUPPER	FINISH
8:00	10:00–10:15	13:15–14:00	15:15–15:30	17:45–18:30	20:00

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

2.1.1 Determine the total amount claimed by the chief moderator (CM) and the internal moderator (IM). (3)

2.1.2 Calculate the value of **A** in TABLE 2. (2)

2.1.3 Markers are allowed a maximum number of marking hours based on the following formula:

$$\textbf{Number of marking hours} = \frac{\textbf{Total number of scripts} \times \textbf{28}}{\textbf{Number of markers} \times \textbf{60}}$$

(a) Using the above formula, determine the expected time and the day on which the markers are likely to finish marking. (6)

(b) Determine the actual day and time when markers finished, according to the hours claimed, if marking started at 14:00 on Monday. (4)

(c) Give ONE possible reason why the markers finished before the expected time. (2)

2.1.4 A total amount of R400 000 was budgeted for the marking team at this particular marking centre.

Verify whether this amount would be sufficient to pay the team for transport, marking and moderation of the scripts. (6)

2.2 The IM and CM were allocated tables with semicircular-shaped table tops, as shown in the picture below. Lumka, the centre manager, explained that two semicircular table tops are made from one square piece of wood.

TABLE WITH A SEMICIRCULAR TOP

The information on how the semicircular tops are cut from the square piece of wood is in ANNEXURE B. The dimensions of the wood are 2,7 m × 2,7 m with a thickness of 38 mm.

You may use the following formulae:

Area of a square = side × side

$$\textbf{Area of a semicircle} = \frac{3{,}142 \times \text{radius}^2}{2}$$

Volume of a rectangular prism = length × width × height

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

2.2.1 Lumka stated that 2,01 m^2 of the wood is cut off when making two semicircular-shaped table tops from one piece of wood.

Verify, showing calculations, whether Lumka's statement is valid. (8)

2.2.2 The wood used is sold for R1 215 per cubic metre, excluding VAT at 15%.

Calculate the total cost, including VAT, of the wood to make 12 semi-circular table tops. (7)

[38]

QUESTION 3

3.1 A group of students at a nursing college wrote two tests for the same course. TABLE 4 shows the test scores, as percentages, of the students.

TABLE 4: TEST RESULTS, AS PERCENTAGES, OF THE STUDENTS

TEST	STUDENTS																	
	Paul	Oscar	Helen	Elsie	Fiona	Ian	Linda	Beauty	Charl	Rose	Kevin	Danie	Neo	Joan	Goitse	Mangi	Zena	Anita
1	89	90	87	90	83	83	94	73	88	Y	97	95	95	86	73	73	84	63
2	50	52	57	61	61	63	65	65	66	67	67	68	70	71	75	78	79	79

[Adapted from www.sanc.gov.za]

A student who scores 85% or more for a test is awarded a distinction.

Use the information in TABLE 4 to answer the questions that follow.

3.1.1 Explain, giving a reason, whether the above data is discrete or continuous. (3)

3.1.2 Determine the median score for Test **2**. (3)

3.1.3 The mean score for Test **1** was 84%. Calculate the value of **Y**. (4)

3.1.4 Identify the candidates whose test scores in both tests differed by 30%. (3)

3.1.5 Calculate the value of the interquartile range for Test **2**. (4)

3.1.6 Express, in simplified fractional form, the probability of randomly selecting a candidate who did not get a distinction for Test **1**. (3)

3.1.7 Determine the modal test score for Test **1**. (2)

3.2 Mangiwe, one of the students at the nursing college, visited the Ambleside town centre and stayed at the Queens Hotel for one week.

The Ambleside town centre map is given in ANNEXURE C.

Use ANNEXURE C to answer the questions that follow.

3.2.1 Identify the road in which parking is not allowed. (2)

3.2.2 Mangiwe travels from Keswick to Rydal Road.

Give ONE reason why she cannot turn right into Compston Road. (2)

3.2.3 Give the general direction of the Queens Hotel from the tennis courts. (2)

3.2.4 On the map, **X** is a point at the information centre and **Y** is a point at the University of Cumbria.

Use the scale on the map to calculate, in yards, the straight-line distance from **X** to **Y**. (4)

3.2.5 Mangiwe parked in Church Street from 12:00 to 15:25. A traffic officer who monitors the area issued her with a fine.

NOTE: A fine is the amount of money that someone has to pay if there is an offence.

(a) Write down for which offence the traffic officer issued her with a fine. (2)

(b) Mangiwe was fined £79,75 by the traffic officer.

Calculate, to the nearest £, the rate per hour for this fine. (5)
[39]

QUESTION 4

4.1 Keitumetse is a South African student who is on holiday in Australia. He went to the Lawrence Theatre to attend a musical concert.

ANNEXURE D shows the seating arrangements of the Lawrence Theatre.

TABLE 5 shows the single ticket prices for a visit to the theatre, in Australian dollar (inclusive of Australian VAT of 10%).

TABLE 5: COST OF A SINGLE TICKET IN AUSTRALIAN DOLLAR

FRIDAY AND SATURDAY	
Adult	$34,70
Student	$30,50
Children (14 and younger)	$17,60

THURSDAY AND SUNDAY	
Adult	$28,60
Student	$26,40
Children (14 and younger)	$17,60

[Adapted from: https://www.theatrelawrence.com]

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

4.1.1 Determine, as a percentage, the probability of randomly selecting an odd numbered seat for a disabled person from all the seats in the theatre. (3)

4.1.2 Identify the row and seat number for a person who is seated as follows:

- In Section B
- Fourth row from the stage
- In the middle seat (2)

4.1.3 Keitumetse is seated in D7 of Section A. He has to assist his friend in A11 after the show.

Describe the shortest possible path he would follow to reach A11. (4)

4.1.4 Sections A to C had the following number of people attending on a Thursday.

	ADULTS	STUDENT	CHILDREN (14 AND YOUNGER)
Section A	53	15	9
Section B	57	32	15
Section C	40	10	9

There was a claim that an amount of exactly $5 796, excluding Australian VAT, was collected on that day.

Verify, with calculations, whether this claim is CORRECT. (8)

4.1.5 Keitumetse bought a ticket for a Friday show.

Calculate how much the ticket costs in South African rand.

Use the exchange rates below.

EXCHANGE RATE		
1 Australian dollar (AUD)	=	0,71 United States dollar (USD)
1 United States dollar (USD)	=	14,43 South African rand (ZAR)

(3)

4.2 While in Australia, Keitumetse studied the inflation rate.

The attached ANSWER SHEET shows graphs and data regarding the monthly inflation rate for 2017 and 2018 in Australia.

NOTE: The 2017 graph is incomplete; however, the 2018 graph is complete.

Use the information on the ANSWER SHEET to answer the questions that follow.

4.2.1 Complete the FIVE missing bars for 2017 on the ANSWER SHEET. (5)

4.2.2 Comparing 2017 with 2018, state the month in which the difference in the inflation rate was the greatest and calculate this difference. (3)

4.2.3 Keitumetse noted the trend in the inflation rate from the end of October 2018 to the end of December 2018.

He then stated that a car costing AUD156 831,36 at the end of October 2018 would cost AUD6 500 more in January 2019.

Verify, showing ALL calculations, whether his statement is CORRECT. (6)

[34]

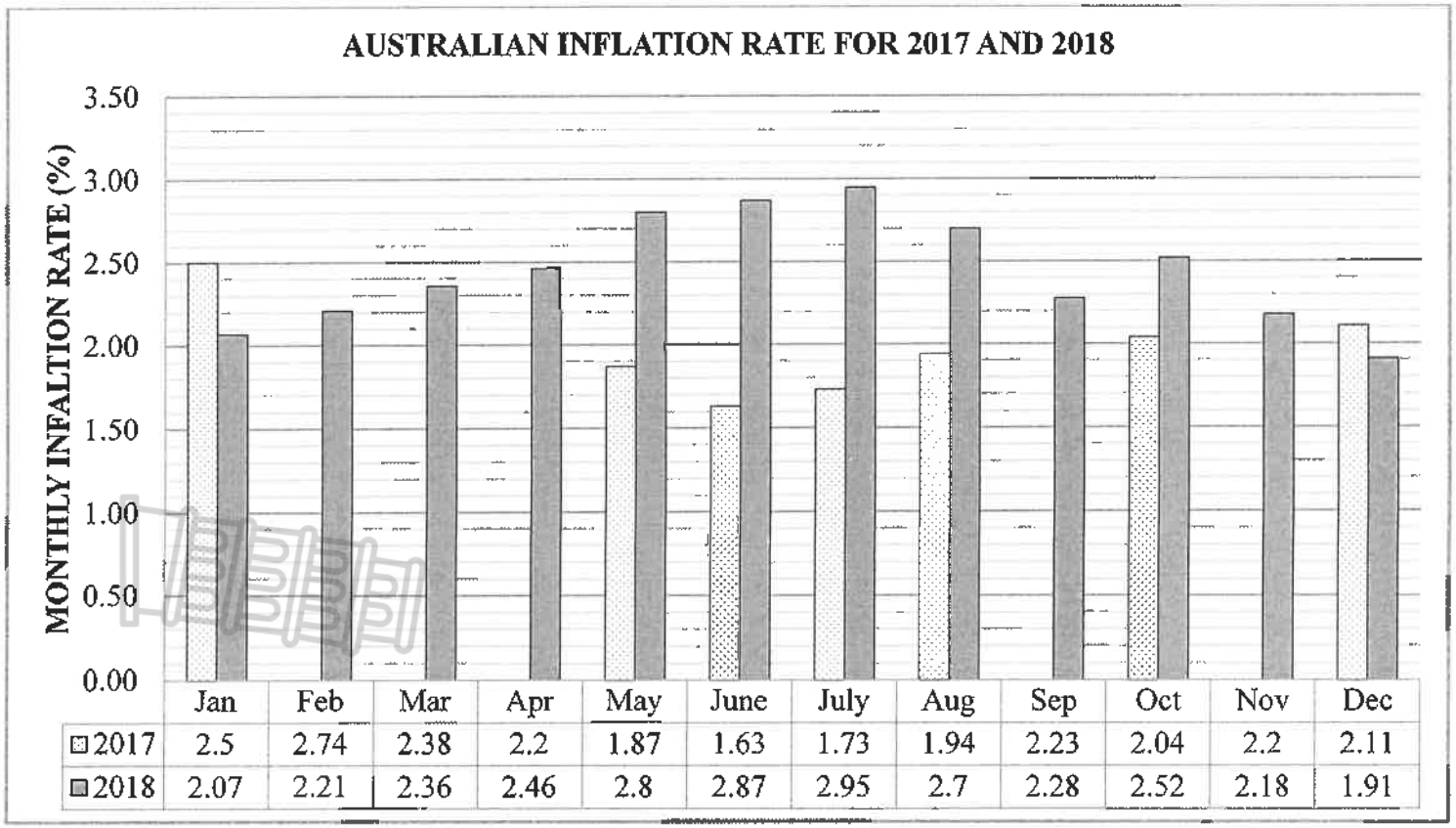
TOTAL: 150

ANSWER SHEET

QUESTION 4.2

CENTRE NUMBER:

EXAMINATION NUMBER:



	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
2017	2.5	2.74	2.38	2.2	1.87	1.63	1.73	1.94	2.23	2.04	2.2	2.11
2018	2.07	2.21	2.36	2.46	2.8	2.87	2.95	2.7	2.28	2.52	2.18	1.91

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GRADE 12

MATHEMATICAL LITERACY P2

ADDENDUM

NOVEMBER 2020

This addendum consists of 5 pages with 4 annexures.

ANNEXURE A

QUESTION 2.1

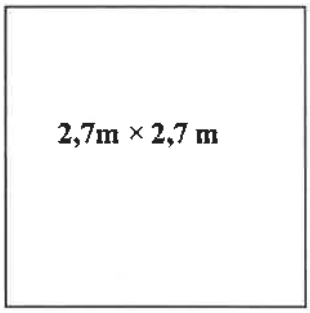
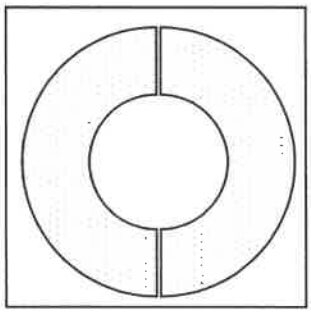
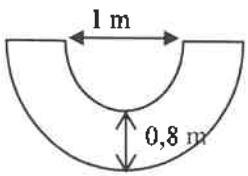
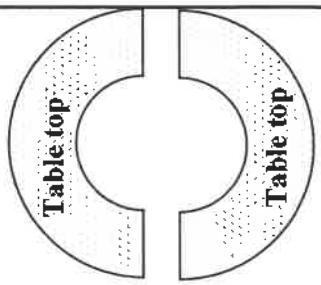
TABLE 2: MARKING TEAM, HOURS WORKED, TARIFFS AND AMOUNT CLAIMED FOR MARKING AND MODERATION

	NUMBER OF PERSONS	HOURS WORKED PER PERSON	TARIFF (R/hr)	AMOUNT (R) CLAIMED PER PERSON
Chief moderator (CM)	1	79	244,35	...
Internal moderator (IM)	1	79	244,35	...
Senior moderator	5	A	211,75	13 763,75
Markers	23	52	195,50	10 166,00
TOTAL	**30**	-	...	...

ANNEXURE B

QUESTION 2.2

TABLE WITH A SEMICIRCULAR TOP

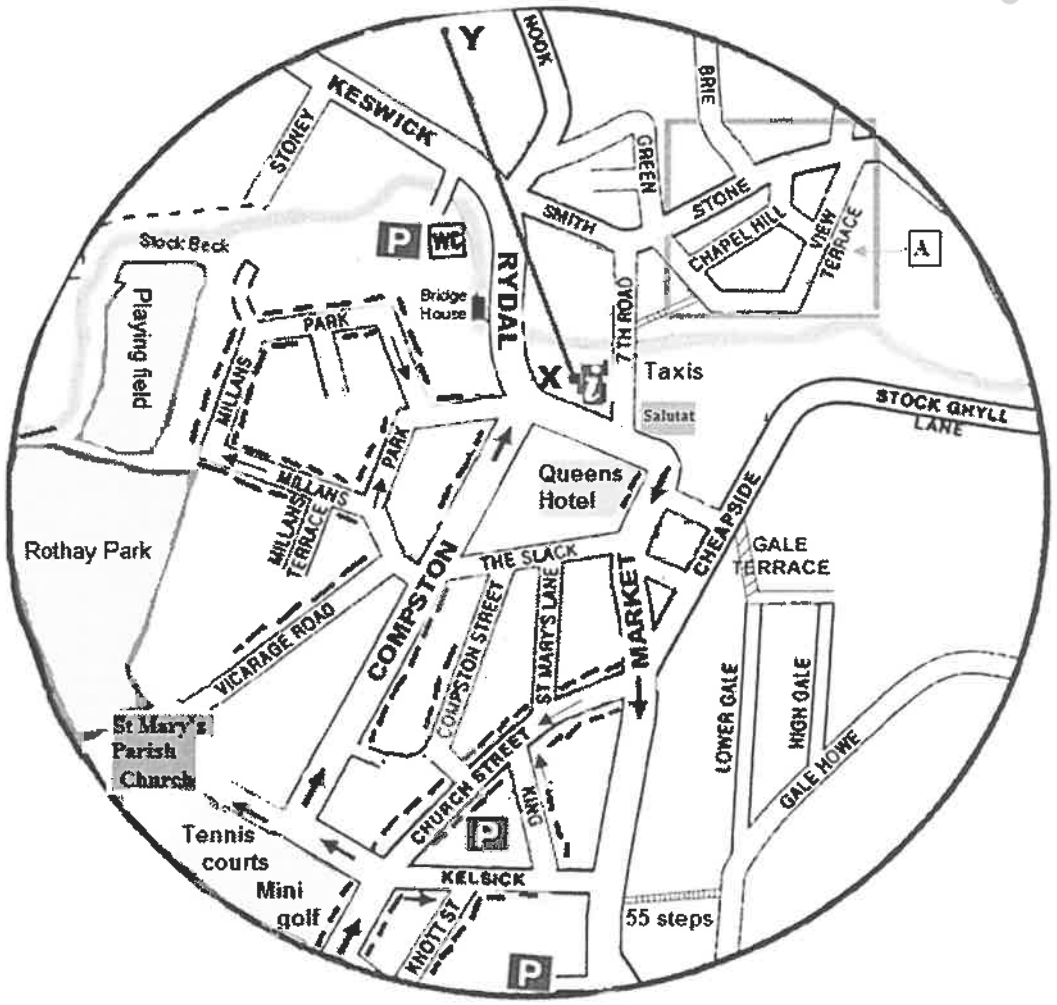
SQUARE BOARD WITH SIDE 2,7 m	TWO SEMICIRCULAR-SHAPED TOPS CUT FROM A SQUARE BOARD	DIMENSIONS OF THE TABLE TOP (NOT DRAWN TO SCALE)
 with a thickness of 38 mm		
		

ANNEXURE C

QUESTION 3.2

MAP OF AMBLESIDE TOWN CENTRE

KEY:	
i	Information
A	Parking in this area is not allowed
– – –	Maximum 1 hour free parking before 5 pm
P	Public car park



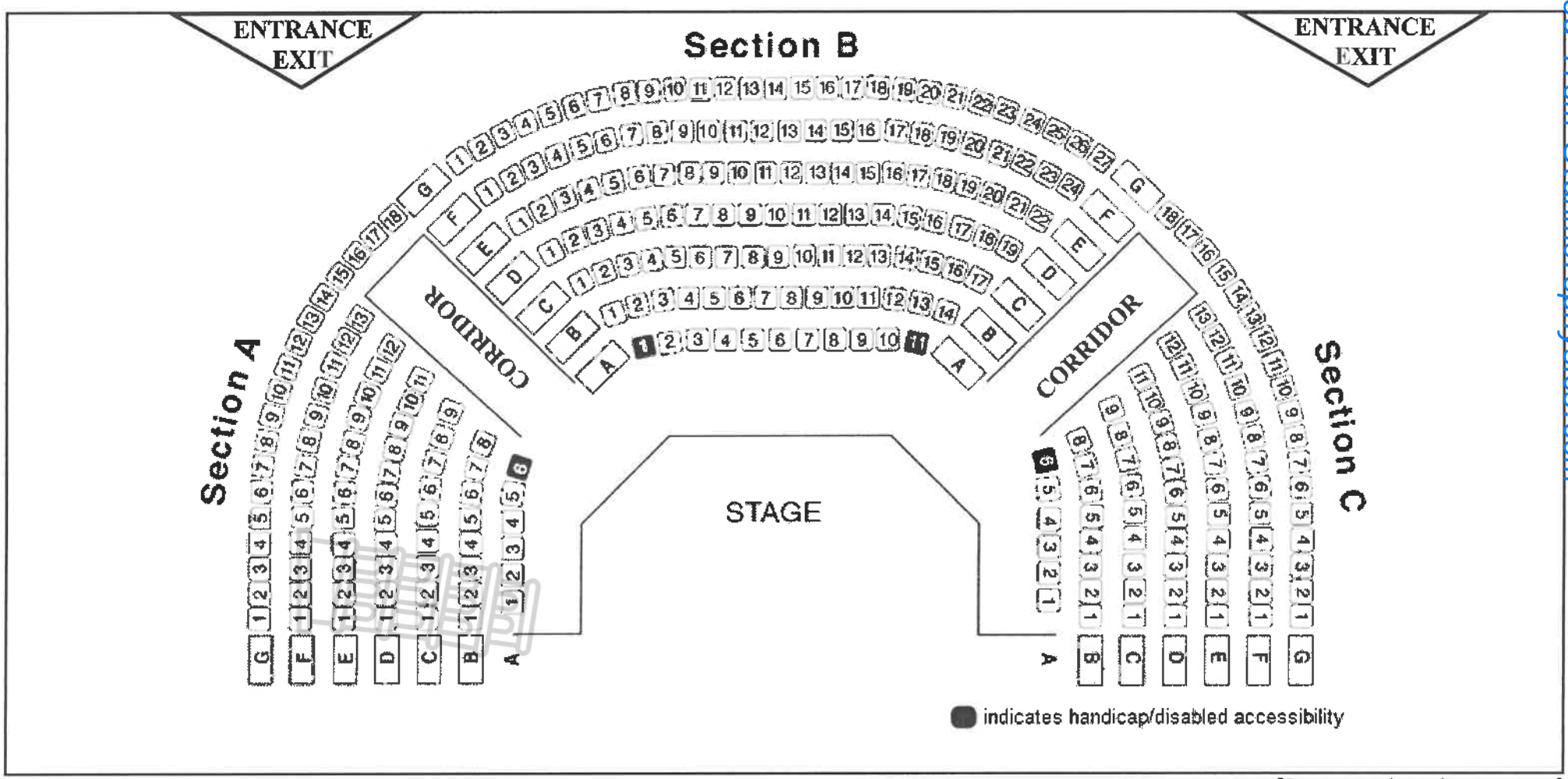
SCALE
110 yards

[Adapted from amblesideonline.co.uk]

ANNEXURE D

QUESTION 4.1

SEATING PLAN OF LAWRENCE THEATRE IN AUSTRALIA WITH A SEATING CAPACITY OF 288



[Source: wp.theatrelawrence.com]

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GRADE/*GRAAD* 12

MATHEMATICAL LITERACY P2/
WISKUNDIGE GELETTERDHEID V2

NOVEMBER 2020

MARKING GUIDELINES/*NASIENRIGLYNE*

MARKS/*PUNTE*: 150

Symbol/*Kode*	Explanation/*Verduideliking*
M	Method/*Metode*
MA	Method with accuracy/*Metode met akkuraatheid*
CA	Consistent accuracy/*Volgehoueakkuraatheid*
A	Accuracy/*Akkuraatheid*
C	Conversion/*Herleiding*
S	Simplification/*Vereenvoudiging*
RT	Reading from a table/a graph/document/diagram/*Lees vanaftabel/grafiek/diagram*
SF	Correct substitution in a formula/*Korrektevervanging in formule*
O	Opinion/Explanation/*Opinie/Verduideliking*
P	Penalty, e.g. for no units, incorrect rounding off, etc./*Penalisasie, bv. virgeeneenhede/verkeerdeafronding, ens.*
R	Rounding off/*Afronding*
NPR	No penalty for rounding/*Geenpenalisasievirafrondingnie*
AO	Answer only/*Slegsantwoord*
MCA	Method with consistent accuracy/*Metode met volgehoueakkuraatheid*

These marking guidelines consist of 22 pages.
Hierdienasienriglynebestaanuit 22 bladsye.

NOTE:
- If a candidate answers a question TWICE, mark only 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 provided at least one of the values is correct; 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.

LET WEL:
- *As 'n kandidaat 'n vraag TWEE KEER beantwoord, sien slegs die EERSTE poging na.*
- *As 'n kandidaat'n antwoord van 'n vraagdoodtrek (kanselleer) ennieoordoennie, sien die doodgetrekte (gekanselleerde) pogingna.*
- *Volgehoueakkuraatheid (CA) word in ALLE aspekte van die nasienriglynetoegepas op voorwaarde dat ten minste een van die waardes korrek is, dithou op by die tweedeberekeningsfout.*
- *Wanneer 'n kandidaat aflesings vanaf 'n grafiek, tabel, uitlegplan en kaart geneem en ekstra antwoorde gee, penaliseer vir elke ekstra item.*

QUESTION/*VRAAG*1 [39 MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T&L**
1.1.1	Slovakia/Slowakye (diff. 2015 -16): ✓RT 163 740 – 161 906 ✓MA = 1 834 ✓ CA	1 RT correct values 1MA method of subtraction 1CA answer (3)	D L2
1.1.2	Range = highest – lowest *Omvang = hoogste – kleinste* ✓ M ✓ RT 2 947 664 = 2 970 436 – N **N** = 22 772 ✓CA	1M Range concept 1RT highest value 1CA simplification **AO** (3)	D L2
1.1.3	✓ O ✓ O Number of learners enrolled decreased from 2014/2015/2016 ✓ O ✓ O **OR** The number of learners decreased every year *Getal ingeskrewe leerders in Griekeland neem vanaf 2014/2015/2016 af* ***OF** Die getal leerder neem jaarliks af*	1O decrease 1O time (2)	D L4

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
1.1.4	% increase(Turkey)/% *verhoging (Turkye)* $= \frac{1\,221\,165 - 1\,064\,190}{1\,064\,190} \times 100\%$ ✓MA ✓M $= \frac{156\,975}{1\,064\,190} \times 100\%$ = 14,75 % ✓CA % increase(United Kingdom) /*% verhoging (VerenigdeKoninkryk)* $= \frac{2\,248\,162 - 1\,596\,803}{1\,596\,803} \times 100\%$ ✓MA = 40,79 % ✓CA United Kingdom has the biggest percentage increase/*Verenigde Koninkryk het die grootste persentasie verhoging.* ✓CA **OR/*OF*** Turkey: (1 221 165 ÷ 1 064 190) ×100% ✓MA = 114,75% % increase (Turkey) = 114,75% –100% ✓M = 14,75% ✓CA (United Kingdom): (2 248 162 ÷ 1 596 803) ×100% ✓MA = 140,79% % increase United Kingdom = 140,79% - 100% = 40,79% ✓CA United Kingdom has the biggest percentage increase /*VerenigdeKoninkryk het die grootstepersentasieverhoging.* ✓CA	1M using correct formula 1MA subtractingcorrect values 1CAsimplification 1MA subtractingcorrect values 1CAsimplificationas a percentage 1CA county **OR/*OF*** 1MA subtracting correct values 1M using correct formula 1CA simplification 1MA subtracting correct values 1CAsimplification as a percentage 1CA county **NPR** (6)	D L3
1.1.5	Probability (decline 2015-2016) /*Waarskynlikheid* $= \frac{3}{11}$ ✓A ✓A ≈ 0,27 ✓CA	1A numerator 1Adenominator 1CA as decimal NPR (3)	P L3

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
1.1.6	Denmark cost/*Denemark koste* = €520,83 × 284 655 ✓RT = €148 256 863,70 ✓A Slovenia cost /*Slovenië koste* ✓RT = €350 × 85 407 = €29 892 450 ✓A €148 256 863,70 : €29 892 450 4,959… : 1 ✓CA ✓O The statement is NOT VALID/*Bewering is NIE GELDIG NIE* **OR/*OF*** Accept per year or per month /*Aanvaar per jaar of per maand* 2016 Denmark : 2016 Slovenia ✓RT ✓RT 284 655 × 520,83 × 12 : 85 407 × 350 × 12 ✓A ✓A 1 779 082 364 : 358 709 400 4,959… : 1 ✓CA ✓O The statement is NOT VALID/*Bewering is NIE GELDIG NIE* **OR/*OF*** Denmark: € 520,83 × 12= € 6249.96 per year /*per jaar* € 6 249,96 × 284 655 ✓RT = € 1 779 082 364 ✓A Slovenia : € 350 × 12 = € 4 200 per year /*per jaar* € 4 200 × 85 407 ✓RT = € 358 709 400 ✓A Denmark: Slovenia € 1 779 082 364 : € 358709 400 (€ 1 779 082 364 ÷ € 358 709 400) : (€ 358 709 400 ÷ € 358 709 400) ✓CA = 4,9596 : 1 The statement is NOT VALID ✓O	1RT correct values 1A cost 1RT correct values 1A cost 1CA simplified ratioin correct order 1O verification **OR/*OF*** 1RT Denmark values 1RT Slovenia values 1A cost 1A cost 1CA simplified ratio in correct order 1O verification **OR/*OF*** 1RT correct values 1A cost 1RT correct values 1A cost 1CA simplified ratioin correct order 1O verification **NPR** (6)	D L4

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
1.2.1	Profit/*Wins* = R30 × 120% = R36 ✓MA Profit per marble / *Wins per albaster*= $\frac{R36}{100}$ = R0,36 ✓CA Cost price per marble/*Kosprys per albaster* = $\frac{R30}{100}$ = R0,30 ✓A Selling price/*Verkoopprys* = R0,36 + R0,30 = R0,66 per marble/*albaster* ✓MCA **OR/*OF*** R30 per 100 marbles/*albasters*is 100% Profit on 100 marbles to yield 120% per pack ✓MA *Wins op 100 albasters om 120% per pakte gee* = $\frac{R30 \times 120\%}{100\%}$ = R36 per pack Price of selling 1 marble is/*Verkoopprys per albaster is*: $\frac{R30 + R36}{100}$ ✓MCA ✓M = R0,66 ✓CA **OR/*OF*** ✓MA Selling price/*verkoopprys* = R30 × 220% = R66 ✓MCA Price per marble/*Prys per albaster* = $\frac{R66}{100}$ = R0,66 ✓M ✓CA **OR/*OF*** ✓MA Price per marble/*Prys per albaster* = $\frac{30}{100}$ = R0,30 ✓M Selling price/*verkoopprys* = 0,3 × 2,2 ✓MCA = R0,66 ✓CA **OR/*OF*** ✓MA Selling price /*verkoopprys* = 30 × 2,2 = R66 ✓MCA Price per marble/*Prys per albaster* = $\frac{66}{100}$ ✓M = R0,66 ✓CA	1MA calculating profit 1CA profit per marble 1A price per marble 1MCA simplification **OR/*OF*** 1MA calculating profit 1MCA cost plus profit 1M dividing by 100 1CA simplification **OR/*OF*** 1MA calculating % increase 1MCA selling price 1M dividing by 100 1CA simplification **OR/*OF*** 1MA dividing by 100 1M calculating % increase 1MCA selling price 1CA simplification **OR/*OF*** 1MA calculating % increase 1MCA selling price 1M dividing by 100 1CA simplification **NPR** (4)	F L3

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
1.2.2	Radius container/*houer* $= \frac{6,4}{2}$ ✓C $= 3,2$ cm ✓MCA Volume of a cylinder/ *Volume van 'n silinder* $= \pi \times \text{radius}^2 \times \text{height}$ ✓SF $= 3,142 \times (3,2 \text{ cm})^2 \times 30\text{cm}$ $= 965,2224 \text{ cm}^3$ ✓CA Volume of 2 bags of marbles/*volume van 2sakkealbasters* $= 2 \times 2 \text{ cm}^3 \times 100$ ✓MA $= 400 \text{ cm}^3$ ✓CA Vol. Water to fill container/*Vol.water om houertevul* $= 965,2224 \text{ cm}^3 - 400 \text{ cm}^3$ ✓MCA $= 565,2224 \text{ cm}^3$ ✓CA $\frac{1}{2}\ell = 500 \text{ cm}^3$ Statement is valid/*Bewering is geldig* ✓O **OR/*OF*** Radius of container/*houer* $= \frac{6,4}{2} = 3,2$ cm ✓C ✓MCA Volume of a cylinder/ *Volume van 'n silinder* ✓SF $= \pi \times \text{radius}^2 \times \text{height} = 3,142 \times 3,2 \text{ cm} \times 3,2 \text{ cm} \times 30 \text{ cm}$ $= 965,2224 \text{ cm}^3$ **OR/*OF*** 0,9652224 litres ✓CA Volume of 2 bags of marbles/*volume van 2 sakke albasters* $= 2 \times 2 \text{ cm}^3 \times 100$ ✓MA $= 400 \text{ cm}^3$ **OR/*OF*** 0,4 litres ✓CA Vol. Water to fill container/*Vol.water om houertevul* $= 965,2224 \text{ cm}^3 - 400 \text{ cm}^3$ ✓MCA $= 565,2224 \text{ cm}^3$ ✓CA **OR /*OF*** $= 0,9652224\ \ell - 0,4\ \ell = 0,5652224\ \ell$ More than $0,5\ \ell$ VALID / *meer as 0,5ℓ GELDIG* ✓O	1C conversion 1MCA finding the radius 1SF both radius and height 1CA simplification 1MA Vol. of total marbles 1CA simplification 1MCA subtraction 1CA simplification 1O conclusion **OR/*OF*** 1C conversion 1MCA finding the radius 1SF both radius and height 1CA simplification 1MA Vol. of total marbles 1CA simplification 1MCA subtraction of volumes 1CA simplification 1O conclusion	M L4

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
	OR/*OF*	**OR/*OF***	
	Radius of container/*houer* = $\frac{6,4}{2}$ ✓C = 3,2 cm ✓MCA	1C conversion 1MCA finding the radius	
	Volume of a cylinder/ *Volume van 'n silinder* = $\pi \times$ radius$^2\times$ height = 3,142 × 3,2 cm × 3,2 cm × 30 cm ✓SF = 965,2224 cm^3 **OR/ *OF*** 0,9652224 litres ✓CA	1SF both radius and height 1CA simplification	
	Volume of 2 bags of marbles/*volume van 2 sakke albasters* = 2 × 2 cm$^3\times$ 100 ✓MA ✓CA = 400 cm^3 **OR/*OF*** 0,4 litres	1MA Vol. of total marbles 1CA simplification	
	✓MCA ✓CA 400 cm^3 + 500 cm^3 = 900 cm^3 This is less than 965,2224 cm^3 of the cylinder , VALID ✓O *Minder as965,2224 cm^{3}van die silinder, GELDIG*	1MCA addition 1CA simplification 1O conclusion (9)	
1.2.3	Outer diameter/*Buitemiddellyn* = 64 mm + 2×0,5 mm = 65 mm ✓ MA Circumference = π × diameter /*Omtrek* = π × *middellyn* = 3,142 ×(6,5) cm ✓ SF = 20,423 cm ✓CA	1MAincreased diameter 1SF substitution 1CA simplification	M L2
	OR/*OF*	**OR/*OF***	
	Radius = 32 mm + 0,5 mm = 32,5 mm ✓ MA = 3,25 cm Circumference/*omtrek*= 2 × π × radius ✓ SF = 2 × 3,142 × 3,25 cm ✓ CA = 20,423 cm	1MA increased radius 1SF substitution 1CA simplification **NPR** (3)	
		[39]	

QUESTION/*VRAAG* 2 [38 MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T&L**
2.1.1	✓A ✓A Total/*Totaal* = 2 × (79 × R244,35) = R38 607,30 ✓CA **OR/*OF*** Amount claimed per person/*Bedrag geeis per persoon*: CM/*HM* = 79 × R244,35 = R19 303,65 ✓A IM = 79 × R244,35 = R19 303,65 ✓A Total/*Totaal* = R19 303,65 + R19 303,65 = R38 607,30 ✓CA	1A number of personnel 1A tariff 1CA simplification **OR/*OF*** 1A CM amount 1A IM amount 1CA simplification (3)	F L2
2.1.2	**A** (Hours worked by SM)/***A****(Ure gewerk deur SM)* = $\frac{\text{R13 763,75}}{\text{R211,75/h}}$ ✓MA = 65 hours/*ure* ✓CA	1MA numerator and denominator 1CA simplification (2)	M L2
2.1.3 (a)	Number of marking hours/*Getalnasienure* = $\frac{2\,808\times 28}{23\times 60}$ ✓ SF ✓SF = 56,97391303 hours/*ure*≈ 57 hours /*ure* ✓CA 1st day (Monday/*Maandag*): 14:00 to 20:00 = 5 hours/*ure* ✓A Tuesday to Saturday/*Dinsdag tot Saterdag*: 50 hours/*ure* Sunday/*Sondag* = 2 hours/*ure* ✓A Total/*Totaal* 5 + 50 + 2 = 57 hrs./*ure* ✓CA Finish at 10:00 on Sunday. *EindigSondag om 10:00* **OR/*OF*** Number of marking hours/ *Getal nasien ure* ✓SF = $\frac{2\,808\times 28}{23\times 60}$ = 56,97391303 hours ≈ 57 hours ✓CA ✓SF Actual marking time per day/ *Werklike merkyd per dag* = 12 hrs – 2 hrs= 10 hrs Start/*Begin* Mon + Tue + Wed + Thu + Fri + Sat + Sun ✓A = 5h + 10h + 10h + 10h + 10h + 10h + 2h = 57 hours /*ure* ✓A Sunday/*Sondag* = 08:00 + 2h = 10:00 ✓CA	1SF correct numerator 1SF correct denominator 1CA simplification/hours 1A hours of 1st day 1A hours of complete days to last day 1CA day& time **OR/*OF*** 1SF correct numerator 1SF correct denominator 1CA simplification/hours 1A hours of 1st day 1A hours of complete days to last day 1CA day and time	M L3

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
	OR/*OF*	**OR/*OF***	
	Number of marking hours/ *Getal nasien ure* $= \frac{2\,808 \times 28}{23 \times 60}$ ✓SF ✓SF = 56,97391303 hours/*ure* ≈ 57 hours/*ure* ✓CA 57hours: Monday/*Maandag* = 5hrs/*uur* ✓A Rest of the days/*Res van die dae* = 57hrs – 5 hrs = 52 hrs/*uur* Full marking days/*Vol merk dae* = $\frac{52}{10}$ = 5,2 days/*dae* Therefore/*dus* 5 days + 0,2 days 5 days Tuesday to Saturday / 5 *dae is Dinsdag tot Saterdag* 0,2 days/*dae*× 10 = 2hrs for Sunday/*uur vir Sondag* ✓A Ends / *eindig* Sunday/*Sondag* 10:00 ✓CA	1SF correct numerator 1SF correct denominator 1CA simplification/hours 1A hours of 1st day 1A hours of complete days to last day 1CA day& time	
	OR/*OF*	**OR/*OF***	
	Number of marking hours/ *Getal nasien ure* $= \frac{2\,808 \times 28}{23 \times 60}$ ✓SF ✓SF ≈ 57 hours/*uur* ✓CA 14:00 to 14:00 = 10 working hours /*werks ure* ✓A Monday 14:00 to Saturday 14:00 = 50 hours *Maandag 14:00 tot Saterdag 14:00 =50 uur* Saturday 14:00 to Sunday 10:00 = 7 hours *Saterdag14:00 tot Sondag 10:00 = 7 uur* ✓A Finish at 10:00 on Sunday ✓CA *Eindig Sondag 10:00*	1SF correct numerator 1SF correct denominator 1CA simplification/hours 1A full day's work 1A hours of complete days to last day 1CA day and time (6) [Accept Tues 10:00]	

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
2.1.3 (b)	✓ MCA 57 – 52 hours/*ure* = 5 working hours earlier/*werksurevroeër* ✓A 2 hrs of Sunday and last 3 hrs of Saturday not worked *2 uur van Sondagen die laaste 3 ure van Saterdagniegewerk* 20:00 – 16:00 = 3 hrs excluding supper/*uur sonder aandete* ✓ CA ✓ CA Finish at 16:15 on Saturday./*EindigSaterdag om 16:15* (Including tea break/*teepouseingesluit*) **OR/*OF*** ✓ A ✓ MA 52 hours claimed = 5 (Monday) + 40 (Tue to Fri) + 7 (Sat) *52 uregeëis = 5 (Maandag) + 40(Di tot Vry) + 7(Sat)* Finish Saturday/*EindigSaterdag* ✓ CA 8:00 + 7 hours + 15 min (tea 1) + 45 min (lunch) + 15 min (tea 2) = 16:15 ✓ CA [also accept 16:00 since they are not paid for tea time] *[aanvaarook 16:00 aangesienhullenievirteepousebetaal word nie]*	1MCA hrs less from marking [**CA from 2.1.3 (a)**] 1A separation of hrs 1CA time 1CA day **OR/*OF*** 1MA breaking up the time 1A the hours per day 1CA day 1CA time **AO** (4)	M L3
2.1.3 (c)	✓✓ O Some candidates omitted some questions or sub-sections. *Sommigekandidatelaatvrae of onderafdelingsuit.* **OR/*OF*** ✓✓ O Some candidates wrote short answers (skipping other steps or lines or sentences). *Sommigekandidateskryfverkorteantwoorde(laatstappeuit)* **OR/*OF*** Responses were very clear to follow. ✓✓ O *Antwoorde was baie maklik omtevolg* **OR/*OF*** ✓✓ O Some markers mark fast. *Sommigenasienerskonvinnig nasien.* **OR/*OF*** ✓✓ O Markers took shorter breaks *Merkers het korter pouses geneem*	2O reason (2)	M L4

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
2.1.4	Transport/*Vervoer* = 11 542 km × R3,26 / km ✓ MA = R 37 626,92 ✓ CA Marking/*Nasien*: = 2 × 79 × R244,35 + 5 × 65 × R211,75 + 23 × 52 × R195,50 = 2 × R19 303,65 + 5 × R13 763,75 + 23 × R10 166 ✓ MCA = R38 607,3 + R68 818,75 + R233 818 = R341 244,05 ✓ CA Total/*Totaal* = R341 244,05 + R 37 626,92 = R378 870, 97. ✓ CA R400 000 budget will be enough/*begroting is genoegsaam*. ✓ O	1MA calculation 1CA amount 1MCA multiply correct number of persons by amount claimed 1CA simplification 1CA total 1O conclusion (6)	F L4
2.2.1	Diameter = 1 m + 0,8 m + 0,8 m = 2,6 m ✓A Area of big circle/*Oppervlakte van grootsirkel* $= 3{,}142 \times \left(\frac{2{,}6\text{ m}}{2}\right)^2$ ✓SF $= 5{,}30998\text{ m}^2$ ✓CA Area of the small circle/*kleinsirkel* = 3,142 × (0,5 m)^2 = 0,7855 m^2 ✓MA Area of the wood/*Oppervlakte van hout* = 2,7 m × 2,7 m = 7,29 m^2 ✓A Cut-off/*Afgesny* = 7,29 m^2 – 5,30998 m^2 + 0,7855 m^2 ✓MCA = 1,98002 m^2 + 0,7855 m^2 ≈ 2,77 m^2 ✓CA Statement is NOT valid/*Bewering is NIE geldigNIE* ✓O **OR/*OF*** Cut-off wood (in m^2) /*Afgesnydehout (in m²)* = Area$_{(square)}$ – [Area $_{(big\ circle)}$ – Area$_{(small\ circle)}$] ✓A ✓SF = 2,7 × 2,7 – [3,142 (0,8 + 0,5)^2 – 3,142 (0,5)^2] ✓A ✓CA ✓MA = 7,29 – [5,30998– 0,7855] = 7,29 – 4,52448 ✓M = 2,76552. ✓CA Which is more than 2,01. Hence, the statement is not valid ✓O *Dit is meer as die 2,01, gevolglik is die beweringniegeldignie.*	1A diameter 1SF circle formula 1CA area big circle 1MAarea small circle 1A area of the wood 1MCA subtracting total circles from square area wood 1CA area 1O conclusion **OR/*OF*** 1A radius big circle 1SF circle formula 1CA area big circle 1MAarea small circle 1A area of the wood 1M subtracting total circles from square area wood 1CA area 1O conclusion	M L4

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
	OR/*OF*	**OR/*OF***	
	Area of semi-circle = ½ π × r^2 ✓A Outer circle/*Buite sirkel* = ½ × 3,142 × (1,3 m)^2 ✓SF = 2, 65499m^2 ✓CA Inner circle/*Binne sirkel* = ½ × 3,142 × (0,5 m)^2 = 0,39275 m^2 ✓MA Desk/*tafel* = 2,65488m^2 – 0,39275m^2 = 2,26224m^2 ✓CA Total area/*Totale oppervlak* = 2,26224 m^2 × 2 = 4,52448 m^2 ✓MCA Cut-off Area/*Afsny hout* = 7,29 m^2 – 4,452448 m^2 = 2,7552 m^2 ✓CA Statement not valid /*Bewering is nie GELDIG nie* ✓O	1A diameter/ radius 1SF circle formula 1CA area big circle 1MA area small circle 1CA area of the wood 1MCA total circles area 1CA area 1O conclusion	
	OR/*OF*	**OR/*OF***	
	Area of big semi-circle /*Oppervlakte van groot halfsirkel* ✓A ✓SF ✓CA = 3,142 × 1,3^2 ÷ 2 = 2,65499 m^2 Area of small semi-circle /*Oppervlakte vanklein halfsirkel* = 3,142 × 0,5^2 ÷ 2 = 0,3927 m^2 ✓MA One semi-circular top/ *Een halfsirkel bo-kant* = 2,65499 – 0,3927 = 2,26224 m^2 Area of two semi-circular tops/*Oppervlakte van 2 halfsirkels* = 2,26224 × 2 = 4,52448 m^2 ✓ MCA Square Board/*Vierkantige hout* = 2,7 × 2,7 = 7,29 m^2 ✓ A Cut-off /*Afsny* = 7,29 m^2– 4,52448 m^2≈ 2,77 m^2 ✓ CA Statement not valid/*Bewering is nie GELDIG nie*✓O	1A diameter/ radius 1SF circle formula 1CA area big circle 1MA area small circle 1MCA total circles area 1A area of the wood 1CA area 1O conclusion (8)	

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
2.2.2	✓ SF ✓ C Volume wood/*hout* = 2,7 m × 2,7 m × 0,038 m = 0,27702 m^3 ✓CA Price of one piece of wood excl.VAT *Prys van een stuk hout BTW uitgesluit* = 0,27702 m^3× R1 215= R336,58 ✓ MA Price including VAT/*Prys BTW ingesluit* = R336,58 × 1,15 = R387,07 ✓ MCA 12 semi-circles cut form 6 boards/*12 halfrondes word uit 6 borde gesny* Cost/*Koste* = R387,07 × 6 ✓ A = R2 322,40 ✓ CA **OR/*OF*** ✓ SF ✓ C Volumewood/*hout* = 2,7 m × 2,7 m × 0,038 m = 0,27702 m^3 ✓CA Volume of 6 woodenboards ✓ A *Volume vir 6 houtborde*= 0,27702 m^3× 6 = 1,66212 m^3 Cost of 6 boards/*Koste van 6 borde* = 1,66212 × R1 215 = R2 019,48 ✓MA Cost with VAT/*Koste met BTW* ✓ MCA = R2 019,48 + (15% ×R2 019,48) = R2 322,40 ✓ CA **OR/*OF*** Price of wood including VAT/*Prys van hout BTW ingesluit* = R1 215 × 1,15 = R1 397,25 ✓MCA ✓ SF ✓ C Volume wood/*hout* = 2,7 m × 2,7 m × 0,038 m = 0,27702 m^3 ✓ CA Cost/*Koste* = R1 397,25 × 0,27702 = R387,07 ✓ MA Cost for 12 semicircles/*Koste vir 12halfsirkels* = R387,07 × 6 ✓ A = R2 322,40 ✓ CA	1SF volume of wood 1C conversion 1CA simplification 1MA calculating cost 1MCA adding 15% 1A 6 boards 1CA cost **OR/*OF*** 1SF volume of wood 1C conversion 1CA simplification 1A 6 boards 1MA calculating cost 1MCA adding 15% 1CA simplification **OR/*OF*** 1MCA adding 15% 1SF volume of wood 1C conversion 1CA simplification 1MA calculating cost 1A 6 boards 1CA simplification (7)	F L3
		[38]	

QUESTION/*VRAAG* 3 [39 MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T&L**
3.1.1	✓ A The data is discrete./*Die data is diskreet* ✓✓ O Percentages run from 0 to 100 and depends on the total of the test and the mark obtained. It is presented as whole numbers. *Persentasies is van 0 tot 100 en hang af van die totaal van die toets en die punt behaal. Hier is dit aangebied as heelgetalle.*	1Adiscrete 2O opinion (3)	D L4
3.1.2	Median score test 2/*mediaan* $= \frac{66+67}{2}$ ✓ RT ✓ M = 66,5 ✓CA	1RT correct value 1M median concept 1CA simplification (3)	D L2
3.1.3	✓ MA Mean/*Gemiddeld* = $\frac{\text{Y (\% mark)} + 1\,443}{18} = 84$ ✓ MA **Y** (% mark) = 18 × 84 – 1 443 ✓ M = 69% ✓ CA **OR/*OF*** 18 × 84 = 1 512 ✓MA ✓ MA Y + 1443 = 1 512 Y = 1 512 – 1 443 ✓M = 69% ✓CA	1MA adding all known% marks 1MA mean concept 1M changing the subject 1CA simplification **OR/*OF*** 1MA mean concept 1MA adding all known % marks 1M changing the subject 1CA simplification (4)	D L3
3.1.4	✓✓RT Helen : 87% – 57% = 30% ✓RT Kevin : 97% –67% = 30% [Note: Afrikaans scripts the answers will be Paul &Oscar]	2RT candidate 1RT candidate (3)	D L3
3.1.5	Q_3/K_3 = 71% ✓ A Q_1/K_1= 61% ✓ A IQR = $Q_3 – Q_1$/*IKO* = $K_3 – K_1$ = 71% – 61% ✓MCA = 10% ✓ CA	1A quartile 3 1A quartile $\mathbf{Q_1}$ 1MCA IQR concept 1CA simplification (4)	D L3

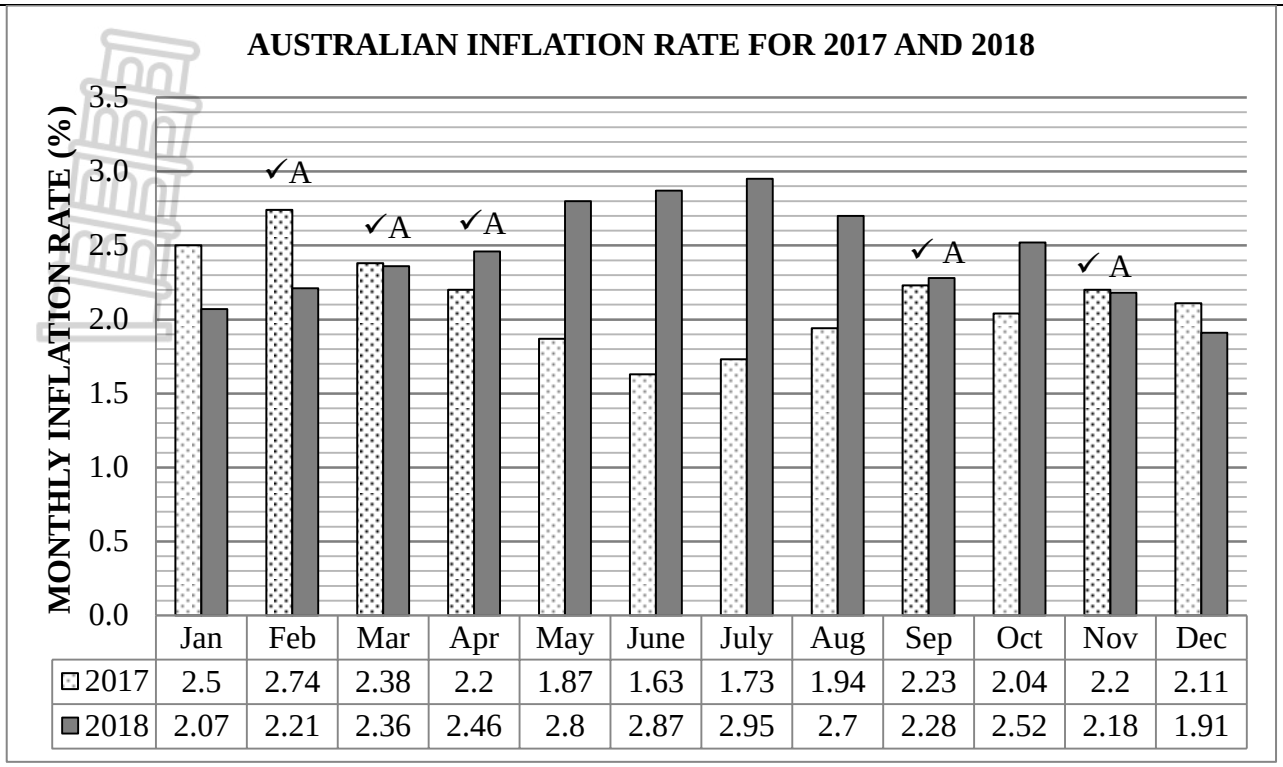
Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
3.1.6	$P_{(\text{non distinction/}nie\ onderskeiding)} = \frac{8}{18}$ ✓A ✓A $= \frac{4}{9}$ ✓CA **OR/*OF*** $P_{(\text{distinction/}onderskeiding)} = \frac{10}{18} = \frac{5}{9}$ ✓A ✓MA $P_{(\text{not distinction/}nieonderskeiding)} = 1 - \frac{5}{9} = \frac{4}{9}$ ✓CA	**CA value of Y from 3.1.3** 1A numerator 1A denominator 1CAsimplification **OR/*OF*** 1A numerator 1MA subtracting from 1 1CA simplification (3)	P L3
3.1.7	Mode/*Modus* = 73% ✓✓A	2A modal value (2)	D L2
3.2.1	View Terrace**OR/*OF*** View**OR/*OF*** Terrace ✓✓RT	2RT Reading from the map (2)	MP L2
3.2.2	✓✓O Facing oncoming traffic/*Sy gaanin aankomende verkeer vasry* **OR/*OF*** One way road/*Dit is 'n eenrigtingpad* ✓✓O	2O reason (2)	MP L4
3.2.3	North west/*Noordwes* or/*of* NW ✓✓A	2A correctdirection (2)	MP L2
3.2.4	✓A 21 mm = 110 yards/*jaart* ✓A XY = $\frac{50 \times 110}{21}$ ✓M XY = 261,904…yards/*jaart* ✓CA ≈ 262 yards/*jaart* [Bar scale accept measurements in the range 20 mm to 23 mm For XY measurements in the range 47 mm to 53 mm]	1A measuring scale 1A measuring distance 1M working with scale 1CA answer **NPR** (4)	MP L3
3.2.5 (a)	Parking offence — *Parkeer boete* ✓✓O Street parking is limited to 1 hour before 5 pm — *Parkering is beperk tot 1 uur voor 5nm.* Exceededallowable duration of parking. — *Oorskryding van toegelate parkering* Free parking time was over — *Gratis parkeering het verstryk* Parked for more than 1 hour. — *Parkeer vir meer as 1 uur*	2O Reason for charge (2)	MP L4

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
3.2.5 (b)	From/*Vanaf* 12:00 - 15:25 = $(3 - 1) + \frac{25}{60}$ ✓M ✓C = 2 ,4166666667 hours/*uur* ✓CA Rate per hour/*Koers per uur*= $\frac{£79,75}{2,4166666667}$ ✓M = £33 ✓CA **OR/*OF*** From/*Vanaf* 12:00 - 15:25 = 3 h 25 min Hours she was charged for /*Ure waarvoor sy beboet is* 3 h 25 min – 1 h = 2 h 25 min ✓M ✓CA 2h 25 min = 145 min ✓C Rate per hour/*Koers per uur* = $\frac{79,75 \times 60}{145}$ ✓M $= \frac{4\,785}{145}$ = £33 ✓CA	1M subtracting free hour 1C conversion minutes into hours 1CA total charged hours 1M division by hours 1CA simplification rounded to the nearest **pound** **OR/*OF*** 1M subtracting free hour 1CA total charged hours 1C conversion hours into minutes 1M division by minutes 1CA simplification rounded to the nearest **pound** (5)	F L3
		[39]	

QUESTION/*VRAAG* 4 [34 MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T&L**
4.1.1	$P_{(\text{odd seat/}onewe)} = \frac{2}{288} \times 100\%$ ✓A ✓A = 0,69% ✓CA	1A numerator 1Atotal seats 1CA simplification (3)	L2 P
4.1.2	✓RT D10 ✓RT	1RT row 1RT seat (2)	L2 MP
4.1.3	**Person at D7:** • Turn left walk towards the corridor./*Draai links en loop na die gang.* ✓A • Turn right walk towards the stage./*Draai regs en loop na die verhoog.* ✓A • At end of the corridor turn left./*Aan die einde van die gang draai links.* ✓A • Walk towards the last seat in the front of section B./*Loop na die laastesitplek in afdeling B.* ✓A	1A turn left and walk 1A turn right towards stage 1A turn left end of corridor 1A last seat; section B (4)	L3 MP
4.1.4	Collection/*Insameling*: Adults/*Volwassenes*: 150 × $28,60 = $4 290 ✓MA ✓CA Students/*Studente*: 57 × $26,40 = $1 504,80 ✓CA Kids/*Kinders*: 33 × $17,60 = $ 580,80 ✓CA Total collection/*Totaalingesamel* = $4 290 + $1 504,80 + $580,80 = $6 375,60 ✓MCA Excluding VAT/*Sonder BTW* $= \frac{\$6\,375,60}{1,10} = \$5\,796$ ✓MCA ✓CA Claim is CORRECT/*Opmerking is KORREK* ✓O	1MA multiply tariff by relevant total patrons. 1CA amount 1CA amount 1CA amount 1MCA total collection 1MCA dividing by 1,10 1CA amount excl. VAT 1O conclusion	F L4

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
	OR/*OF*	**OR/*OF***	
	Adults/*volwassenes* = 53 + 57 + 40 = 150 ✓ MA Cost/*Koste* = \$28,60 × 150 = \$4 290 ✓ MCA Cost excl VAT /*Koste BTW uitgesluit* = \$4 290 ÷ 1,10 = \$3 900 ✓ CA	1MA multiply tariff by relevant total patrons. 1MCA dividing by 1,10 1CA amount	
	Students/*Studente* = 15 + 32 + 10 = 57 Cost/*Koste*= \$26,40 × 57 = \$1 504,80 Cost excl VAT /*Koste BTW uitgesluit* = \$1 504,80 ÷ 1,10 = \$1 368 ✓ CA	1CA amount	
	Children = 9+15+9 = 33 Cost/*Koste* = \$17,60 × 33 = \$580,80 Cost excl VAT/*Koste BTW uitgesluit* = \$580,80 ÷ 1,10 = \$528 ✓ CA	1CA amount	
	Total/*Totaal* = \$3 900 + \$1 368 + \$528 ✓ MCA = \$5 796 ✓ CA The claim is correct/ *Opmerking is KORREK* ✓ O	1MCA total collection 1CA amount excl. VAT 1O conclusion	
	OR/*OF*	**OR/*OF***	
	Section A/*Afdeling A*: ✓ MA = 53 × 28,60 + 15 × 26,40 + 9 × 17,60 = 1 515,80 + 396,00 + 158,40= 2 070,20 ✓ CA	1MA multiply tariff by relevant total patrons. 1CA amount	
	Section B/ *Afdeling B*: = 57 × 28,60 + 32 × 26,40 + 15 × 17,60 = 1 630,20 + 844,80 + 264,00= 2 739,00 ✓ CA	1CA amount	
	Section C/ *Afdeling C*: = 40 × 28,60 + 10 × 26,40 + 9 × 17,60 = 1 144,00 + 264,00 + 158,40= 1 566,40 ✓ CA	1CA amount	
	Total amount of Sections = 2 070,20 + 2 739,00 + 1 566,40 = \$6 375,60 ✓ MCA ✓ MCA Excluding VAT/*Sonder BTW* = $\frac{\$6\,375,60}{1,10}$ = \$5 796 ✓ CA **or/*of*** \$5 796 × 1,1 = \$6 375,60 which equals total collection	1MCA total collection 1MCA dividing by 1,10 1CA amount excl. VAT	
	Claim is CORRECT/*Opmerking is KORREK* ✓ O	1O conclusion	

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
	OR/*OF*	**OR/*OF***	
	Adult / *Volwassenes* ✓ MCA Price excl. VAT/*Prys sonder BTW* = \$28,60 × $\frac{100}{110}$ = \$26 ✓ MA Total amount/*Totale bedrag* = 26 × 150 = \$3 900 ✓ CA	1MCA dividing by 1,10 1MA multiply tariff by relevant total patrons. 1CA amount	
	Student /*Studente* Price excl.VAT /*Prys sonder BTW*=\$26,40 × $\frac{100}{110}$ = \$24 Total amount/*Totale bedrag* = \$24 × 57 = \$1 368 ✓ CA	1CA amount	
	Children/*Kinders* Price excl. VAT/ *Prys sonder BTW* = \$17,60 × $\frac{100}{110}$ = \$16 Total amount/*Totale bedrag* = \$16 × 33 = &528 ✓ CA	1CA amount	
	Total collection/ *Totale insameling* = 3 900 + 1 368 + 528 ✓ MCA = \$5 796 ✓ CA Claim is CORRECT/*Opmerking is KORREK* ✓ O	1MCA total collection 1CA amount excl. VAT 1O conclusion (8)	
4.1.5	Cost in USD/*Koste in VSD* ✓RT = \$30,50 × 0,71 = 21,655 USD/*VSD* ✓MCA Cost in rand/*Koste in rand* = \$21,655 × R14,43/\$ = R312,48 ✓MCA	1RTticket price 1MCA answer in USD 1MCA answer in rand	L2 F
	OR/*OF*	**OR/*OF***	
	Conversion factor ZAR to AUD /*Herleidingsfaktor* : R14,43 × 0,71 = R10,2453 ✓A ✓RT \$30,50 × R10,2453 =R312,48 ✓MCA	1A Conversion factor 1RT ticket price 1MCA answer in rand	
	OR/*OF*	**OR/*OF***	
	Conversion to ZAR/ *Herlei na ZAR* ✓RT = \$30,50 × 0,71 × R14,43 ✓MCA = R312,48 ✓MCA	1RT ticket price 1MCA Conversion 1MCA answer in rand (3)	

4.2.1	 5 × A for each correct bar (5)		L2 D
4.2.2	✓A June/*Junie* ✓MCA Difference/*Verskil* = 2,87% – 1,63% = 1,24% ✓CA	1A correct month 1MCA subtracting values 1CA simplification (3)	L3 F
4.2.3	✓ RT Inflation Nov/*Inflasie Nov* = AUD 156 831,36 × 2,18 % = AUD3418,92 ✓ MCA Dec cost of car /*Des koste*= AUD 156 831,36 + AUD3418,92 = AUD 160 250,28 ✓ CA Inflation Dec/*Inflasie Des* = AUD 160 250,28 × 1,91 % = AUD 3 060,78 Jan. cost of car/*Koste in Jan.* = AUD 160 250,28 + AUD 3 060,78 = AUD 163 311,06 ✓ CA Increase/*Verhoging*= AUD 163 311,06 – AUD 156 831,36 = AUD 6 479,70 ✓ CA He is incorrect/*Hy is NIE korrek NIE* ✓ O	1RT correct rate 1MCA Increasing 1CA simplification 1CA simplification second month cost 1CA increase 1O opinion	F L4

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
4.2.3	**OR/*OF*** Inflation Nov/*Inflasie Nov* = \$156 831,36 × 2,18 % ✓RT = \$3418,92 ✓ MCA Dec. cost of car /*Des koste*= \$ 156 831,36 + \$3418,92 = \$ 160 250,28 ✓ CA Inflation Dec/*Inflasie Des* = \$ 160 250,28 × 1,91 % = \$ 3 060,78 ✓ CA Price increase = Inflation Nov + Inflation Dec *Prysverhoging = Inflasie Nov + Inflasie Des* = \$3418,92 + \$ 3 060,78 = \$ 6 479,70 ✓ CA ✓ O He is incorrect/*Hy is NIE korrek NIE* **OR/*OF*** December/ *Desember*: ✓ RT Cost of car/*Koste van motor*= \$156 831,36 × 102,18 % ✓ MCA = \$160 250,28 ✓CA January/*Januarie* Cost of car/*Koste*= \$ 160 250,28 × 101,91 % = \$ 163 311,06 ✓ CA Increase/*Verhoging* = \$ 163 311,06 – \$156 831,36 = \$ 6 479,70 ✓ CA He is incorrect/*Hy is verkeerd* ✓ O **OR/*OF*** Price in January /*Prys in Januarie* ✓ RT ✓ MCA ✓ CA = AUD 156 831,36 × 1,0218 × 1,0191 = AUD 163 311,0641 ✓ CA Increase/*Verhoging* = AUD 163 311,06 – AUD 156 831,36 = AUD 6 479,70 ✓CA Incorrect/ *Nie korrek nie* ✓O	**OR/*OF*** 1RT correct rate 1MCA Increasing 1CA simplification 1CA simplification second month inflation 1CA increase 1O opinion **OR/*OF*** 1RT correct rate 1MCA Increasing by % 1CA simplification 1CA simplification 1CA increase 1O opinion **OR/*OF*** 1RT correct rate 1MCA Increasing 1CA Increasing 1CA simplification 1CA increase 1O opinion	F L4

	OR/*OF* ✓RT ✓MCA December price /*Desember prys* = AUD 156 831,36 × 1,0218 = AUD 160 250,28 ✓CA Januaryprice/*Januarie prys* = AUD 160 250,28 × 1,0191 = AUD 163 311,06 ✓CA Adding the increase to the price in November *Tel die verhoging by die prys in November* = AUD 156 831,36 + AUD 6 500 = AUD 163 331,36 ✓CA Therefore/*dus*AUD 163 331,36 ≠ AUD 163 311,06 Incorrect / *Nie korrek nie* ✓O **OR/*OF*** Price end October = AUD 156 831,36 January price/*Januarie prys* ✓RT ✓MCA ✓M = AUD 156 831,36 × 1,0218 × 1,0191 = AUD 163 311,0641 ✓CA Subtracting stated increase / *Trek die beweerde verhoging af* AUD 163 311,0641 – AUD 6 500 = AUD 156 811,06 ✓CA Therefore/*dus*AUD 156 831,36 ≠ AUD 156 811,06 Incorrect/ *Nie korrek nie* ✓O	**OR/*OF*** 1RT correct rate 1MCA Increasing by % 1CA simplification 1CA simplification 1CA increase 1O opinion **OR/*OF*** 1RT correct rate 1M Increasing by % 1M Increasing by % 1CA simplification 1CA comparing values 1O opinion (6)	
		[34]	
		TOTAL/*TOTAAL*:150	