



basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

SENIOR CERTIFICATE EXAMINATIONS/ NATIONAL SENIOR CERTIFICATE EXAMINATIONS

MATHEMATICAL LITERACY P2

2021



MARKS: 150

TIME: 3 hours

This question paper consists of 11 pages and an addendum with 3 annexures.

INSTRUCTIONS AND INFORMATION

1. This question paper consists of FOUR questions. Answer ALL the questions.
2. Use the ANNEXURES in the ADDENDUM to answer the following questions:

ANNEXURE A for QUESTION 2.1
ANNEXURE B for QUESTION 3.2
ANNEXURE C for QUESTION 4.2
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 drawn to scale, unless stated otherwise.
10. Write neatly and legibly.

QUESTION 1

- 1.1 Aggie and 14 friends started a stokvel in order to buy groceries. The grocery items bought will be shared equally among all the members of the stokvel. Aggie sourced prices from two wholesalers, **A** and **B**, for the items they intend buying.

TABLE 1 below shows the comparison of the prices, excluding VAT, of items she needs to buy. (Some values have been omitted.)

TABLE 1: PRICES OF ITEMS AT WHOLESALERS FOR JANUARY 2020

ITEM DESCRIPTION (packaging detail)	QUANTITY (as per packaging detail)	WHOLESALER A	WHOLESALER B
		TOTAL AMOUNT	TOTAL AMOUNT
Cake flour (12,5 kg)	15	R1 274,85	R1 334,25
Maize meal (5 kg)	30	R689,70	R659,70
Rama 125 g (48 in a packet)	15	R4 154,85	R3 899,85
# Rice (10 kg)	15	R1 679,85	R1 814,85
# Canned fish (12 cans × 400 g)	10	R1 559,50	R1 699,00
# Long-life milk (6-pack of 1 ℓ)	15	R1 049,85	R1 154,85
Spice (10 × 50 g)	15	R1 499,85	R1 439,85
VAT (15%)		...	R1 100,05
Total including VAT		...	R13 102,40

NOTE: # – means items that are VAT exempted
1 ℓ ≈ 1 kg

Use the information and TABLE 1 above to answer the questions that follow.

- 1.1.1 Write down how many cans of fish each member of the stokvel will receive. (3)
- 1.1.2 Aggie stated that she could load all these items onto her half-ton bakkie without overloading it. (7)
- Verify, showing ALL calculations, whether her statement is valid. (7)
- 1.1.3 Determine, showing ALL calculations, which wholesaler (**A** or **B**) will be cheaper if she buys all the items (including VAT) from one wholesaler. (7)
- 1.1.4 The food inflation rate was 5,17% in January 2021 and is estimated to be 5,3% in January 2022. (5)
- Calculate the total amount for 5 kg of maize meal from Wholesaler **B** at the end of January 2022.

1.2

Below is a picture of a cylindrically shaped 400 g can of fish. The can is fully covered by a label with dimensions as shown in the picture.

Picture of the label on a can of fish	Dimensions of the label on the can
	Diameter = 73 mm Height = 10,6 cm

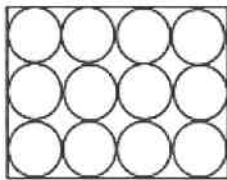
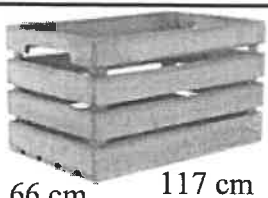
You may use the following formulae:

Circumference of a circle = diameter $\times$ 3,142

Surface area of the label around the can = circumference $\times$ height

Use the information above to answer questions that follow.

- 1.2.1 (a) Calculate (in cm^2) the surface area of the label around the can. (4)
- (b) Determine the total length of a label if an overlap of 0,6 cm is needed for it to be glued around a can. (2)
- 1.2.2 Some of the cans of fish are imported by ship. The cans of fish are wrapped in packs of 12.

Wrapped pack of 12 cans of fish	Top view of a pack of 12 cans	Shipping crate
		

Dimensions of a pack of 12 cans:

- Length: 29,2 cm
- Width: 21,9 cm
- Height: 10,8 cm

The mass of an empty can is 40 g.

The mass of a fully packed shipping crate with cans of fish is 280 kg.

The inner dimensions of a shipping crate are 117 cm by 66 cm by 50 cm.

Packs of cans are placed lengthwise (length to length) in the shipping crates.

Aggie stated that an empty shipping crate has a mass of less than 20 kg.

Verify, with calculations, if her statement is valid.

(9)
[37]

QUESTION 2

2.1

Tumi received a bursary to study at the University of Victoria in Canada. She travelled from the University of Victoria to Victoria Downtown.

ANNEXURE A shows the map and two routes she could have used to travel on.

A summary of the route via Cadboro Road and Pandora Avenue [12 min. (6,8 km)] she used (with some information missing) is listed below.

SUMMARY OF THE ROUTE

Section	Description of her journey
	Head ... on Cedar Hill Cross Road towards Crestview. Drive 190 m.
	Turn right onto Cadboro Road. Drive 3,2 km.
	Continue onto Fort Street. Drive ... km.
	Slight right onto Pandora Avenue. Drive 2,1 km. You have reached your destination.



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

2.1.1 In which general direction did she head from Cedar Hill Cross Road towards Crestview? (2)

2.1.2 Determine the distance that she travelled on Fort Street. (3)

2.1.3 Name the road she travelled on after crossing Flower Street. (2)

2.1.4 Calculate (in km/h) the average speed she travelled.

You may use the formula:

$$\text{Distance} = \text{Speed} \times \text{Time} \quad (4)$$

2.1.5 On another day, Tumi travelled from the University of Victoria to Victoria Downtown via Shelburne at an average speed of 36,5 km/h.

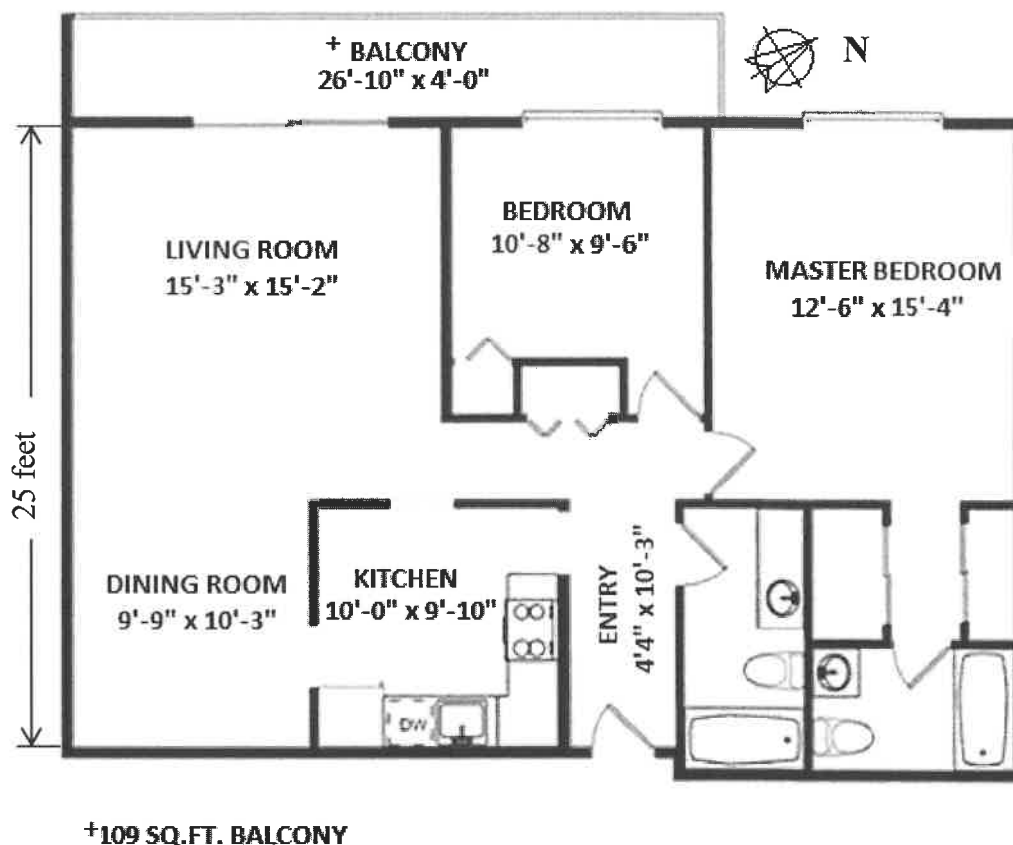
Calculate (in metres) the difference between the distances of the two routes. (3)

2.2

Tumi rented a 1 045 square feet apartment while she was studying.

Below is a layout plan of the apartment. The dimensions are given in feet and inches.

LAYOUT PLAN OF TUMI'S APARTMENT



[Source: <http://bcrealtyweb.com/bcvreb/vreb.pictures/34969717.jpg>]

NOTE: 1 foot = 12 inches 10'-3" = 10 feet 3 inches
1 inch = 25,4 mm

Use the information above to answer the questions that follow.

- 2.2.1 Verify, showing ALL calculations, whether the balcony with dimensions 26 feet 10 inches by 4 feet is greater or less than 109 square feet.

You may use the formula:

$$\text{Area of a rectangle} = \text{length} \times \text{width} \quad (6)$$

- 2.2.2 The southwest-facing wall, excluding the balcony, is 25 feet. Measure this distance on the layout plan to determine the scale in the form 1 cm : ... feet. (3)

- 2.2.3 Tumi's monthly rent for her apartment is C\$2 188,71 (C\$ is Canadian dollar).

Calculate the rental rate per square feet. (3)

2.3

A rental price ratio is used to calculate whether it is cheaper to rent or buy a property.

This ratio is calculated as follows:

$$\text{Rental price ratio} = \frac{\text{Average property price}}{\text{Average annual rent}}$$

This ratio is generally classified into three categories:

- **Low (15 and below):** better to buy than to rent
- **Moderate (15,1 to 20):** usually better to rent than to buy
- **High (20,1 and above):** definitely better to rent than to buy

Use the above information to answer the questions that follow.

2.3.1 The average house price is C\$300 000 and the price to rent is C\$6 000 per quarter.

Advise Tumi, showing ALL calculations, whether she should rent or buy a property. (4)

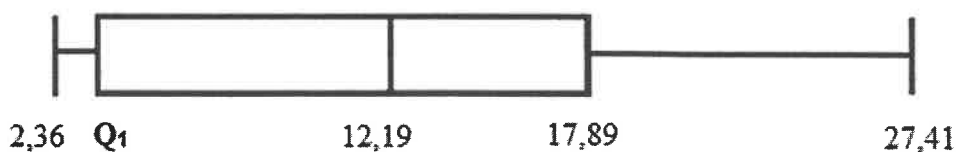
2.3.2 The following are rental price ratios of selected **North American** cities:

2,11	3,62	4,24	4,24	4,68	5,62	5,87
6,44	6,52	7,20	7,59	7,64	7,64	7,69
8,32	8,41	8,72	9,11	11,08	13,85	15,26

The following are rental price ratios of selected **South Asian** cities:

16,68	12,00	42,80	12,55	7,00	10,82
8,55	13,56	7,07	29,86	27,71	6,84

The rental price ratios of selected cities in **Africa** are illustrated in the box and whisker plot below.



Use the above information to answer the questions that follow.

- Determine, in simplified fractional form, the probability of randomly selecting a South Asian city classified as high. (3)
- Determine the value of Q_1 (the 1st quartile) if the interquartile range (IQR) for Africa is 14,25. (3)
- Comment on the possibility of owning a property in these areas by comparing the minimum, maximum and median values for North America and Africa. (5)

[41]

QUESTION 3

3.1

TABLE 2 shows data for South African assessed taxpayers for the 2018 tax year.

TABLE 2: TAXPAYERS BY INCOME GROUP AS ASSESSED FOR 2018

Taxable income group	Taxpayers		Taxable income		Tax assessed	
	Number	%	Amount (R million)	%	Amount (R million)	%
Less than R1	127 428	2,6%	-16 302	-1%	2	0,0%
R1 to R70 000	400 133	8,1%	15 030	0,9%	16	0,0%
R70 001 to R350 000	2 856 043	58,1%	577 196	34,8%	59 961	16,8%
R350 001 to R500 000	717 157	14,6%	297 012	17,9%	55 464	15,6%
More than R500 000	816 268	16,6%	783 526	47,3%	240 756	67,6%
Total	4 917 029		C		356 199	

[Adapted from SARS and Businesstech.co.za]

Use the above data to answer the questions that follow.

3.1.1 Calculate missing value C. (2)

3.1.2 Determine, to THREE decimal places, the probability of randomly choosing an assessed taxpayer if South Africa's population was 57,73 million in 2018. (4)

3.1.3 Calculate, in rand, the mean monthly taxable income per taxpayer in the R70 001 to R350 000 taxable income group. (5)

3.1.4 In the table, the percentage for tax assessed is 0,0% for the taxable income group R1 to R70 000.

Explain, showing calculations, how this percentage was obtained. (4)

3.2

Emily earns a monthly gross salary of R26 904,22. She pays 7,5% of her gross salary towards her pension fund. In South Africa, taxable income is gross income minus payments towards a pension fund.

3.2.1 Calculate Emily's annual taxable income. (4)

3.2.2 The VAT rate in March 2018 was 14%. This rate was increased to 15% in April 2018.

Emily bought an item, including VAT, for R172,50 in April 2018.

Calculate the March 2018 price of this item, including VAT. (4)

3.2.3 ANNEXURE B shows the distribution of assessed taxpayers and income tax per province represented by arrows.

Use ANNEXURE B to answer the questions that follow.

(a) Arrange the provinces in descending order of tax assessed. (4)

(b) Give a reason why all these arrows have different lengths. (2)

(c) Emily stated that when comparing the lengths of the arrows of the North West and Free State, they varied proportionally according to the tax-assessed percentage.

Verify whether her statement is valid. (3)
[32]

QUESTION 4

4.1

The South African taxi association, Transaction Capital, published its results for the current state of the South African minibus taxi industry for the year ended September 2019. A summary of the results are as follows:

- 250 000 minibus taxis are currently doing business in South Africa.
- The net worth of the minibus taxi industry is R50 billion a year.
- Minibus taxis are responsible for 15 million commuter trips daily.
- Minibus taxis travel 19 billion kilometres a year.

[Source: TCP_HY19 Results analysis booklet]

Transaction Capital is interested in entering the European market.

Below are two exchange rates quoted at different times of the day:

Exchange Rate A: 1 euro = 15,97 ZAR

Exchange Rate B: 1 euro = 15,966728 ZAR

Use the information above to answer the questions that follow.

4.1.1 It is given that there is one bus for every 13,2 minibus taxis on the road.

Determine, to the nearest thousand, the number of buses needed to replace the minibus taxis.

(3)

4.1.2 Transaction Capital plans to present a business model to a group of European businessmen.

(a) Calculate (in euros) the difference in net worth of the minibus taxi industry using exchange rates A and B.

(6)

(b) Justify which exchange rate (A or B) they should use when doing the presentation to their European clients.

(3)

4.1.3 The ratio of the number of daily commuter trips is given as follows:

train : bus : minibus taxi is 4 : 5 : 75

Calculate the number of commuters who do NOT use a minibus taxi daily.

(4)

4.1.4 The average distance between the moon and Earth is 384 402 km.

A minibus taxi owner stated that the distance travelled by minibus taxis in one year is more than 24 000 trips to the moon and back.

Verify, showing ALL calculations, whether the statement is valid.

(5)

4.2

Transaction Capital is listed on the Johannesburg Securities Exchange (JSE).

(A securities exchange is a place where investors buy and sell the shares of a company in a regulated and legitimate space.)

ANNEXURE C shows the share price of Transaction Capital for the period 9 January 2015 to 3 January 2020.

(Shares are units of ownership interest in a company or financial asset that provide for an equal distribution of profits.)

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

- 4.2.1 Write down the total number of days covered by the period shown in ANNEXURE C. (4)
- 4.2.2 Determine (in cents) the value of a share on 9 January 2015 if it was R12,68 less than the amount shown on 3 January 2020. (2)
- 4.2.3 Verify, showing calculations, whether the following statements are CORRECT:
- (a) Transaction Capital's share price went down by 3,51% for the day ending 3 January 2020. (5)
- (b) At the beginning of each year 80% of the time, share prices went down. (3)
- 4.2.4 Calculate (in rand) the profit a person will make if he/she bought 5 000 shares at the 52-week lowest price and sold them when the price was at its highest. (5)
- [40]
- TOTAL: 150**



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MATHEMATICAL LITERACY P2

ADDENDUM

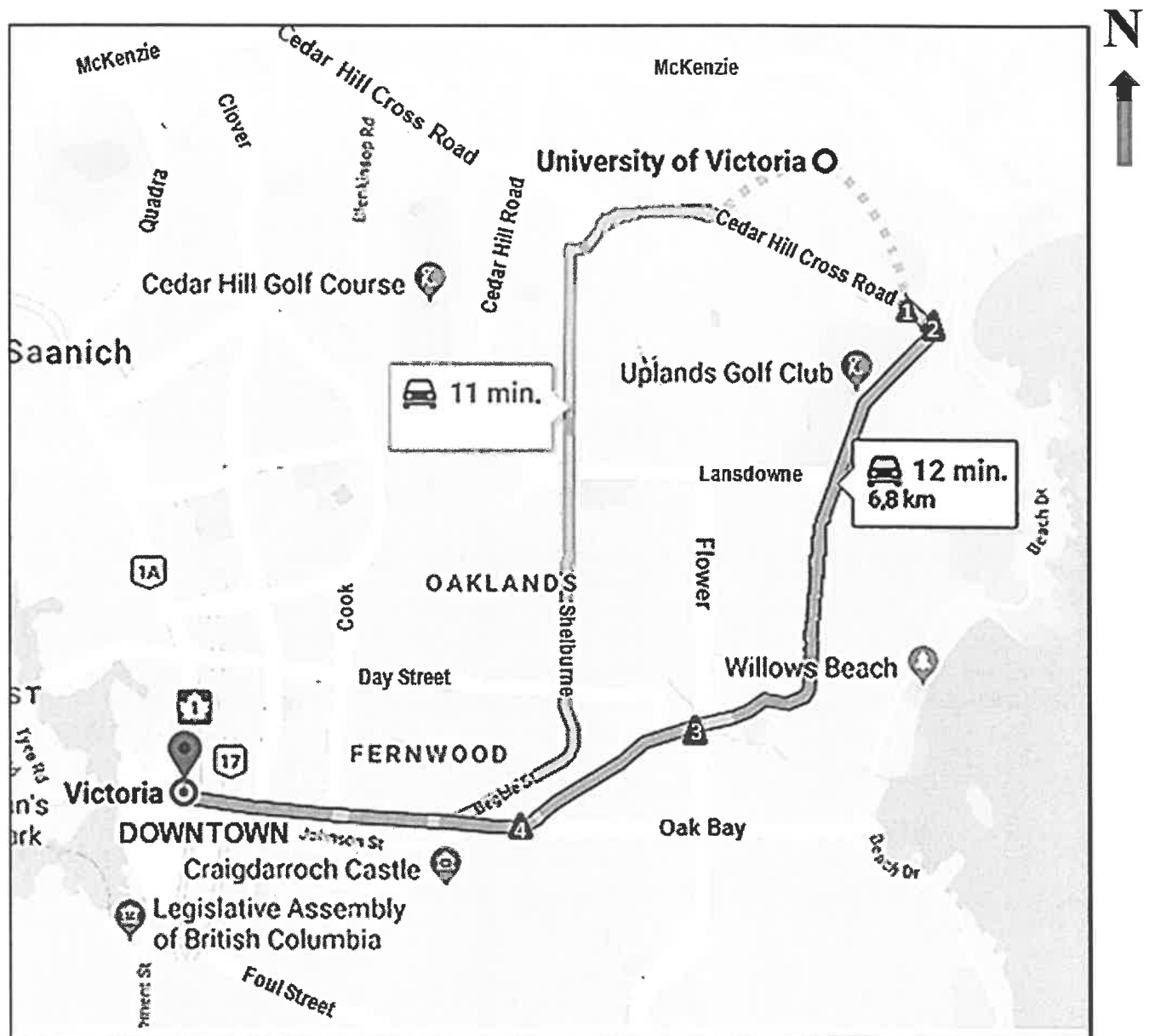
2021

This addendum consists of 4 pages with 3 annexures.

ANNEXURE A

QUESTION 2.1

MAP OF A PORTION OF VICTORIA IN CANADA

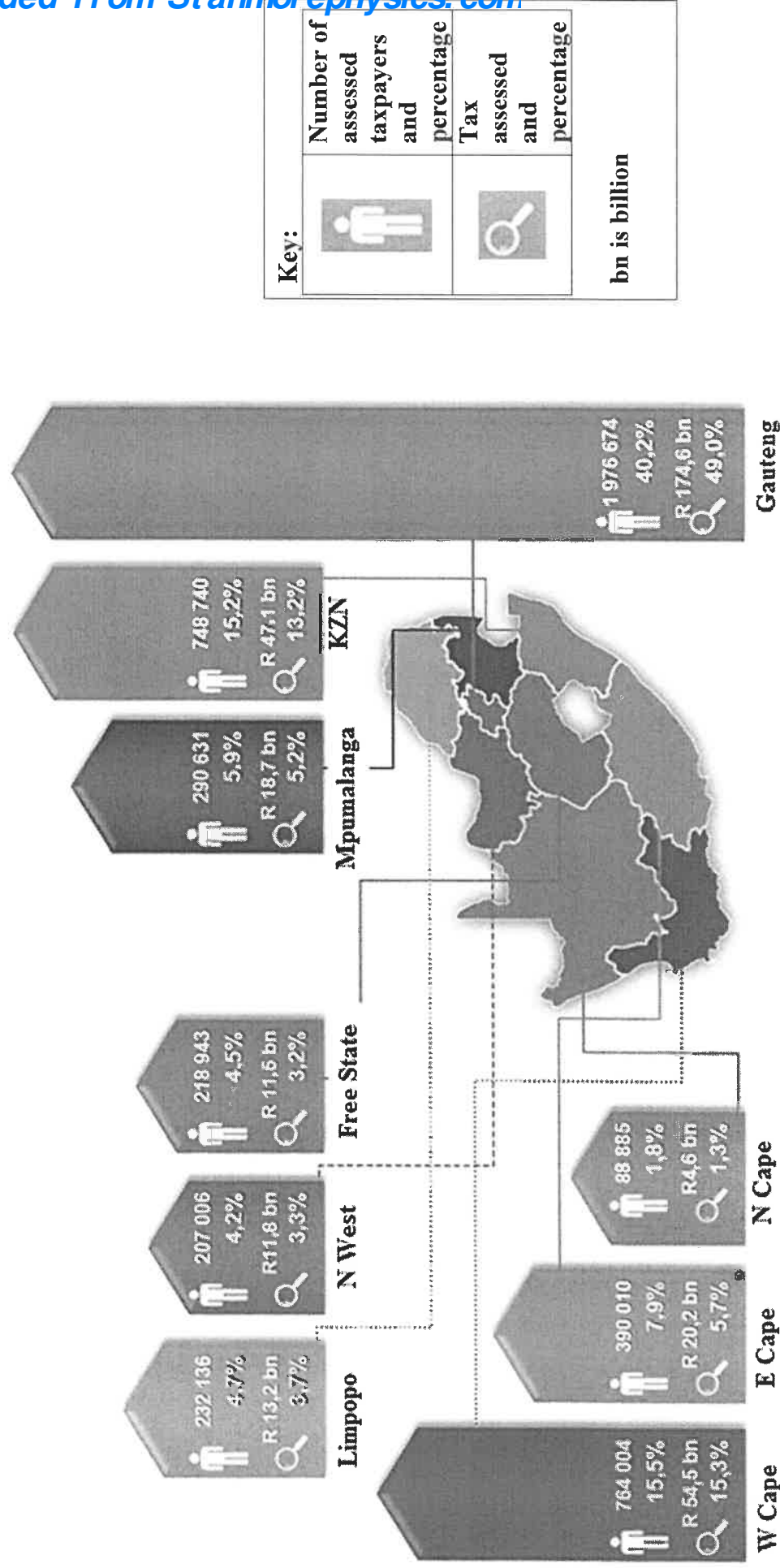


[Adapted from Google Maps]

ANNEXURE B

QUESTION 3.2

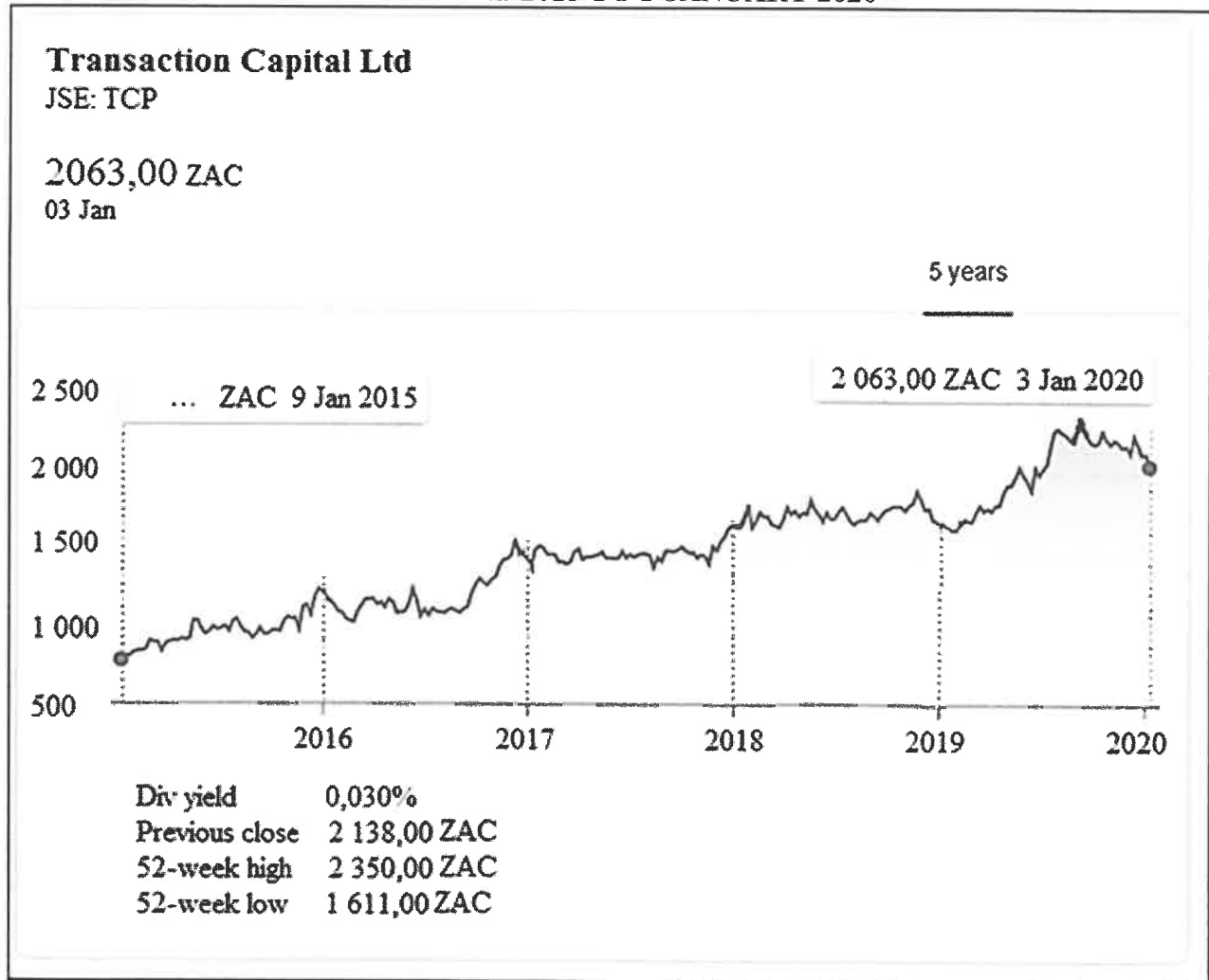
DISTRIBUTION OF ASSESSED TAXPAYERS AND INCOME TAX PER PROVINCE, 2018



ANNEXURE C

QUESTION 4.2

**SHARE PRICE FOR TRANSACTION CAPITAL FOR THE PERIOD
9 JANUARY 2015 TO 3 JANUARY 2020**

**NOTE:**

- **ZAC** is South African cents.
- The price of a share changes throughout the day but on the graph the price at the close (end of the day) is shown.



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SENIORSERTIFIKAAT-EKSAMEN
NATIONAL SENIOR CERTIFICATE EXAMINATIONS/
NASIONALE SENIORSERTIFIKAAT-EKSAMEN**

**MATHEMATICAL LITERACY P2/
WISKUNDIGE GELETTERDHEID V2**

MARKING GUIDELINES/NASIENRIGLYNE

2021

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/a graph/document/diagram/Lees vanaf tabel/grafiek/diagram
SF	Correct substitution in a formula/Korrekte vervanging in 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 constant accuracy/Metode met volgehoue akkuraatheid
*	An asterisk next to a question indicates reference to the notes.

**These marking guidelines consist of 21 pages.
Hierdie nasienriglyne bestaan uit 21 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, however it stops at the second calculation error.
- No CA mark follows after a breakdown.
- 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 principal 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.*
- *Geen CA-punt volg na 'n afbreking nie.*
- *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/VRAAG1 [37 MARKS/PUNTE]			
Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
1.1.1	$\text{Number of tins /Getal blikke} = 12 \times 10 = 120 \quad \checkmark\text{MA}$ $\text{No of tins each member gets/Getal wat elke lid kry} = 120 \div 15 \quad \checkmark\text{MA}$ $= 8 \quad \checkmark\text{CA}$	1MA multiplying by 10 1MA dividing by 15 1CA simplification AO (3)	M L2
* 1.1.2	$12,5 \text{ kg} \times 15 = 187,5 \text{ kg} \quad \checkmark\text{M}$ $5 \text{ kg} \times 30 = 150 \text{ kg}$ $0,125 \text{ kg} \times 48 \times 15 = 90 \text{ kg} \quad \checkmark\text{C}$ $10 \text{ kg} \times 15 = 150 \text{ kg}$ $12 \times 0,4 \text{ kg} \times 10 = 48 \text{ kg} \quad \checkmark\text{M}$ $6 \times 15 \text{ kg} = 90 \text{ kg} \quad \checkmark\text{C}$ $10 \times 0,05 \text{ kg} \times 15 = 7,5 \text{ kg}$ $\text{Total/Totaal} = 723 \text{ kg} \quad \checkmark\text{CA}$ $\text{Half ton} = 500 \text{ kg} \quad \checkmark\text{A}$ Not valid cannot fit into a half-ton bakkie. $\checkmark\text{O}$ <i>Nie geldig, dit is meer as die halfton.</i> OR/OF $12,5 \text{ kg} \times 15 = 187,5 \text{ kg}$ $5 \text{ kg} \times 30 = 150 \text{ kg} \quad \checkmark\text{M}$ $10 \text{ kg} \times 15 = 150 \text{ kg}$ $6 \times 15 \text{ kg} = 90 \text{ kg} \quad \checkmark\text{C}$ $\text{Total Weight} = 577,5 \text{ kg}$ $125 \text{ g} \times 48 \times 15 = 90\,000 \text{ g}$ $400 \text{ g} \times 12 \times 10 = 48\,000 \text{ g}$ $50 \text{ g} \times 10 \times 15 = 7\,500 \text{ g}$ $\text{Total Weight} = 145\,500 \text{ g}$ $= 145,5 \text{ kg} \quad \checkmark\text{C}$ $\text{Total} = 577,5 \text{ kg} + 145,5 \text{ kg} \quad \checkmark\text{M}$ $= 723 \text{ kg} \quad \checkmark\text{CA}$ $\text{Half Ton} = 500 \text{ kg} \quad \checkmark\text{A}$ NotValid. $\checkmark\text{O}$	1M multiplying by quantity 1C conversion g to kg 1M adding all values 1C conversion ℓ to kg 1CA simplification 1A half ton value 1O conclusion OR/OF 1M multiplying by quantity 1C conversion ℓ to kg 1C conversion g to kg 1M adding all values 1CA simplification 1A half ton value 1O conclusion(7)	M L4

* 1.1.3	Total cost of items where VAT must be added <i>Totale koste van items waar BTW bygevoeg moet word</i> ✓MA = R1274,85+ R689,70+ R4 154,85+ R1499,85 = R7 619,25 ✓A ✓MCA VAT amount /BTW-bedrag= R7 619,25 × 15% = R1 142,89 ✓A Total amount/<i>Totale bedrag</i> = R7 619,25 + R1 142,89 + R1679,85 + R 1 559,50 + R1049,85 ✓MCA = R13 051,34 ✓CA ✓A Wholesaler A/<i>Groothandelaar A</i> OR/OF Total cost of items where VAT must be added <i>Totale koste van items waar BTW bygevoeg moet word</i> ✓MA = R1274,85+ R689,70+ R4 154,85+ R1499,85 = R7 619,25 ✓A ✓✓MA R7 619,25 × 1,15 = R8 762,14 ✓MCA R8 762 + R1 679,85 + R1 559,50 + R1 049,85 = R13 051,34 ✓CA Wholesaler A/<i>Groothandelaar A</i> ✓A OR/OF	1MA adding items that are subject to VAT 1A simplification 1MCA multiplying by 15% 1A simplification 1MCA adding all values 1CA simplification 1A choosing wholesale A OR/OF 1MA adding items that are subject to VAT 1A simplification 2MA multiplying by 115% 1MCA adding all values 1CA simplification 1A conclusion OR/OF	F L3
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Solution/ <i>Oplossing</i>	Explanation/ <i>Verduideliking</i>
OR/OF Total cost of items $= R1\ 679,85 + R689,70 + R4\ 154,85 + R1\ 274,85 + R1\ 559,50 + R1\ 049,85 + R1\ 499,85 \quad \checkmark A$ $= R11\ 908,45$ Excluding VAT exempted items $= R11\ 908,45 - R4\ 289,20 \quad \checkmark MA$ $= R7\ 619,25 \quad \checkmark A$ VAT amount = $R7\ 619,25 \times 15\% \quad \checkmark MA$ $= R1\ 142,89 \quad \checkmark A$ Total amount = $R11\ 908,45 + R1\ 142,89$ $= R13\ 051,34 \quad \checkmark CA$ Wholesaler <i>A/Groothandelaar A</i> $\checkmark A$ OR/OF Items that attract VAT: $\checkmark MA$ Without VAT + 15% VAT = Including VAT $R1\ 274,85 + R191,23 = R1\ 466,08$ $R689,70 + R103,46 = R\ 793,16 \quad \checkmark A$ $R4\ 154,85 + R623,23 = R4\ 778,08$ $\underline{R1\ 499,85 + R244,98} = \underline{R1\ 724,83}$ $R7\ 619,25 + R1\ 142,89 = R8\ 762,14 \quad \checkmark CA$ VAT exempted items $= R1\ 679,85 + R1\ 559,50 + R1\ 049,85$ $= R4\ 289,20 \quad \checkmark A$ Total including VAT $= R8\ 762,14 + R4\ 289,20 \quad \checkmark MCA$ $= R13\ 051,34 \quad \checkmark CA$ Wholesaler <i>A/Groothandelaar A</i> $\checkmark A$	OR/OF 1A simplification 1MA subtracting items that have VAT 1A simplification 1MA multiplying by 15% 1A simplification 1CA simplification 1A conclusion OR/OF 1MA multiplying by 15% 1A simplification 1CA simplification 1A simplification 1MCA adding all values 1CA simplification 1A conclusion

(7)

Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
*			M L3
1.1.4	2020 price /prys = R659,70 $\checkmark$RT 2021 price /prys = R659,70 $\times$ 105,17% $\checkmark$M = R693,80649 $\checkmark$S 2022 price /prys= R693,80649 $\times$ 105,3% $\checkmark$MCA = R730,57823.. = R730,58 $\checkmark$CA OR/OF 2020 price /prys = R659,70 $\checkmark$RT 2021 increase/verhoging = R659,70 $\times$ 5,17% = R34,10649 2021 price /prys= R659,70 + R34,10649 $\checkmark$M = R693,80649 $\checkmark$S 2022 increase/verhoging= R693,80649 $\times$ 5,3% = R36,77714397 $\checkmark$M 2022 price /prys= R693,80649 + R36,77714397 $\approx$ R730,58 $\checkmark$CA OR/OF $\checkmark$RT $\checkmark$M $\checkmark$MCA $\checkmark\checkmark$CA R659,30 $\times$ 1,0517 $\times$ 1,053 = R730,58 OR/OF 2020 Unit price/Eenhedsprys $= \frac{R659,70 \checkmark\text{RT}}{30} = R21,99$ 2021 price /prys = R21,99 $\times$ 105,17% $\checkmark$M = R23,126883 $\checkmark$S 2022 price /prys = R23,126883 $\times$ 105,3% $\checkmark$MCA = R24,3526... = R24,35 $\checkmark$CA or R24, 352607799 $\times$ 30 = R730, 58	1RT price 1M multiplying by 105,17% 1S simplification 1MCA increasing with 5,3% 1CA simplification OR/OF 1RT price 1M adding 5,17% 1S simplification 1M increasing with 5,3% 1CA simplification OR/OF 1RT price 1M multiplying by 105,17% 1MCA increasing with 5,3% 2CA simplification OR/OF 1RT price 1M multiplying by 105,17% 1S simplification 1MCA increasing with 5,3% 1CA simplification	

(5)

Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
* 1.2.1 (a)	Outer diameter /buitemiddellyn = 73 mm = 7,3 cm ✓C Circumference of a circle/Omtrek van 'n sirkel = $7,3 \times 3,142$ ✓SF = 22,9366 cm ✓CA Surface area of the label / Buite oppervlak van die etiket = circumference $\times$ height/Omtrek $\times$ hoogte = $22,9366 \text{ cm} \times 10,6 \text{ cm}$ = <u>243,12796</u> cm² ✓CA OR/OF ✓C ✓SF ✓MCA Surface area = $7,3 \times 3,142 \times 10,6$ = <u>243,12796</u> cm² ✓CA OR/OF ✓SF ✓MA Surface area = $73 \times 3,142 \times 106$ = 24312,796 mm² ✓CA = <u>243,12796</u>.. cm² ✓C	1C conversion 1SF substitution 1CA simplification 1CA simplification OR/OF 1C conversion 1SF substitution 1MCA multiply with 10,6 1CA simplification OR/OF 1SF substitution 1MA multiply with 106 1CA simplification 1C conversion NPR (4)	M L2
1.2.1 (b)	Total length = circumference + overlap Totale lengte = omtrek + oorslag = $22,9366 \text{ cm} + 0,6 \text{ cm}$ ✓MCA = 23,5366 cm ✓CA	CA from 1.2.1 (a) 1MCA adding to circumference 1CA simplification (2)	M L2

Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
* 1.2.2	Number of packs lengthwise / <i>Getal pakke in lengte</i> $= \frac{117}{29,2}$ ✓MA ≈ 4 ✓R Number of packs width-wise / <i>Getal pakke in breedte</i> $= \frac{66}{21,9}$ ≈ 3 ✓CA Number of layers of packs height-wise / <i>Getal lae</i> $= \frac{50}{10,8}$ $= 4,63$ ≈ 4 ✓CA The first layer will have / <i>Onderste laag het</i> No packs / <i>pakke</i> $4 \times 3 = 12$ cans in a pack / <i>blikke in 'n pak</i> $= 12 \times 12$ $= 144$ cans / <i>blikke</i> ✓CA Number of cans in a crate / <i>Getal blikke in 'n krat</i> $= 144 \times 4$ $= 576$ ✓CA Mass / <i>Massa</i> $= 576 \times 440 \text{ g}$ or $576 \times 400 \text{ g}$ $= 253\,440 \text{ g}$ $= 230\,400$ $= 253,44 \text{ kg}$ $= 230,4 \text{ kg}$ ✓CA Mass of the crate / <i>Massa van die krat</i> $= 280 \text{ kg} - 253,44 \text{ kg}$ or $280 \text{ kg} - 230,4$ $= 26,56 \text{ kg}$ $= 49,6 \text{ kg}$ ✓MCA Not valid / <i>Nie geldig nie</i> ✓O	1MA dividing 29,2 1R round down 1CA simplification 1CA simplification 1CA simplification 1CA number of cans 1CA mass of the shipment 1MCA crate mass 1O conclusion	MP L4

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
	OR/OF Number of packs lengthwise /Getal pakke in lengte $= \frac{117}{29,2} \approx 4 \quad \checkmark \text{MA} \quad \checkmark \text{S}$ Number of packs width-wise/Getal pakke in breedte $= \frac{66}{21,9} \approx 3 \quad \checkmark \text{CA}$ Number of layers of packs height-wise/Getal lae $= \frac{50}{10,8} = 4,63 \approx 4 \quad \checkmark \text{CA}$ Number of packs in a crate/ Getal pakke in 'n krat $= 4 \times 3 \times 4 = 48 \quad \checkmark \text{CA}$ Number of tins in a crate / Getal blikke in 'n krat $= 48 \times 12 = 576 \quad \checkmark \text{CA}$ Mass / Massa = $576 \times 440 \text{ g}$ or $576 \times 400 \text{ g}$ $= 253\,440 \text{ g}$ $= 230\,400$ $= 253,44 \text{ kg}$ $= 230,4 \text{ kg}$ $\checkmark \text{CA}$ Mass of the crate / Massa van die krat $= 280 \text{ kg} - 253,44 \text{ kg} \quad \text{or} \quad 280 \text{ kg} - 230,4 \text{ kg}$ $= 26,56 \text{ kg} \quad = 49,6 \text{ kg} \quad \checkmark \text{MCA}$ Not valid/ Nie geldig nie $\checkmark \text{O}$	OR/OF 1MA dividing 29,2 1S round down 1CA simplification 1CA simplification 1CA simplification 1CA number of cans 1CA mass of the shipment 1MCA crate mass 1O conclusion	(9) [37]

QUESTION/VRAAG2 [41 MARKS/PUNTE]			
Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
2.1.1	South East or SE/Suidoos of SO	2A correct direction (2)	MP L2
* 2.1.2	Distance/Afstand = $6,8 \text{ km} - (0,19 + 3,2 + 2,1) \text{ km}$ = 1,31 km ✓RT ✓M ✓CA	1RT all correct values 1M subtracting from 6,8 km 1CA simplification (3)	MP L2
2.1.3	Fort Street/Fortstraat ✓✓A	2A correct street (2)	MP L2
* 2.1.4	$12 \text{ min} = \frac{12}{60} \text{ hour/uur} = 0,2 \text{ hour/uur}$ ✓C Distance/ Afstand = Speed/ spoed × time/ tyd $6,8 \text{ km} = \text{speed/ spoed} \times 12 \text{ min}$ ✓SF Speed/spoed = $\frac{6,8 \text{ km}}{0,2 \text{ hour}} = 34 \text{ km/h}$ ✓S ✓CA	1C convert min to hour 1SF substitution 1S changing subject of the formula 1CA simplification (4)	MP L3
2.1.5	Distance/Afstand = Speed/ spoed × time/tyd $= 36,5 \text{ km/h} \times \frac{11}{60} \text{ h}$ ✓SF $= 6,69166667 \text{ km}$ ✓A Difference/Verskil = $6,8 \text{ km} - 6,69 \text{ km}$ $= 0,1083333 \text{ km}$ $\approx 108,3 \text{ m}$ ✓CA	1SF correct values 1A distance CA simplification NPR if answer is in metre (3)	MP L3
* 2.2.1	Length = $(26 + \frac{10}{12}) \text{ feet/voet}$ = 26,83333... feet/voet ✓M Area = $26,8333... \times 4 \text{ feet/voet}$ ✓C $= 107,333... \text{ feet}^2/\text{voet}^2$ ✓SF LESS THAN /MINDER AS ✓O OR/OF Area/Opp = $26 \text{ feet/voet} \times 4 \text{ feet/voet}$ ✓SF $= 104 \text{ feet/voet}$ 40 inches ✓CA $40 \text{ inches/duim} = \frac{40}{12} = 3 \text{ feet/voet}$ 4 inches/duim ✓C Total area = $104 \text{ feet/voet} + 3 \text{ feet} \text{ 4 inches/duim}$ ✓M $= 107 \text{ feet/voet}$ 4 inches/duim ✓CA LESS THAN / MINDER AS ✓O	1M adding 1C conversion 1CA simplification 1SF substitution 1CA simplification 1O conclusion OR/OF 1SF substitution 1CA simplification 1C conversion 1M adding 1CA simplification 1O conclusion	M L4

Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
	OR/OF L = $26 \times 12 + 10 = 322$ in/dm W = $4 \times 12 = 48$ in/dm ✓C Area = 322×48 ✓SF = $15\,456$ in²/dm² = $\frac{15\,456}{12^2}$ ✓CA = $107,733$ feet²/voet² ✓O LESS THAN / MINDER AS OR/OF ✓M L = $26 \times 12 + 10 = 322$ in/dm ✓CA W = $4 \times 12 = 48$ in/dm ✓C Area = 322×48 ✓SF = $15\,456$ in²/dm² 109 feet²/voet² $\times 12^2 = 15\,696$ in²/dm² ✓CA Area = $15\,456$ in²/dm² which is LESS THAN/Minder as ✓O	OR/OF 1M adding 1CA simplification 1C conversion 1SF substitution 1CA simplification 1O conclusion OR/OF 1M adding 1CA simplification 1C conversion 1SF substitution 1CA simplification 1O conclusion (6)	
2.2.2	✓A Measured distance/<i>gemete afstand</i> = 82 mm = $8,2$ cm Scale/<i>Skaal</i> : $8,2$ cm : 25 feet/<i>voet</i> ✓M 1 cm : $\frac{25}{8,2}$ 1 cm: $3,05$ feet/<i>voet</i> ✓CA [Accept distances from 8cm to 8,6 cm]	1A measurement 1 M scale 1CA simplification (3)	MP L3
2.2.3	Rate per square foot /<i>koers per vierkante voet</i> = $\frac{2\,188,71}{1\,045}$ ✓RT ✓M = C\$ $2,09445...$ $\approx$ C\$ $2,09$ / foot² ✓CA	1RT correct values M dividing by $1\,045$ 1CA simplification NPR (3)	F L2
2.3.1	Annual rent = C\$ $6\,000 \times 4 =$ C\$$24\,000$ ✓MA Price to rent ratio/<i>huurprysverhouding</i> = $\frac{\text{Average Property Price}}{\text{Average Annual Rent}} / \frac{\text{Gemiddelde Eiendom Prys}}{\text{Gemiddelde Jaarlikse huur}}$ = $\frac{\text{C\\$ } 300\,000}{\text{CS } 24\,000}$ ✓SF = $12,5$ ✓CA Tumi should buy. / <i>Tumi moet koop</i> ✓O	1MA calculating annual rent 1SF substitution 1CA simplification 1O conclusion (4)	F L4

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L												
	OR/OF Quarterly price=$\frac{300\,000}{4}=75\,000$ ✓MA Price to rent ratio $=\frac{75\,000}{6\,000}$ ✓SF = 12,5 Tumi should buy. <i>Tumi moet koop.</i> ✓O	OR/OF 1MA calculating quarterly price 1SF substitution 1CA simplification 1O conclusion (4)													
2.3.2 (a)	$P = \frac{3}{12}$ ✓RT ✓RT $= \frac{1}{4}$ ✓CA	1RT numerator 1RT denominator 1CA simplification (3)	P L2												
* 2.3.2 (b)	$IQR = Q_3 - Q_1 / IKO = K_3 - K_1$ ✓M $14,25 = 17,89 - Q_1$ $Q_1 = 17,89 - 14,25$ ✓SF $= 3,64$ ✓CA	1M IQR formula 1SF substitution 1CA simplification (3)	D L3												
* 2.3.2 (c)	Minimum: North America is lower than Africa ✓A <i>Minimum: Noord-Amerika is laer as Afrika</i> Maximum: North America is lower than Africa ✓A <i>Maksimum: Noord-Amerika is laer as Afrika</i> ✓A Median North America (7,59) is lower than Africa ✓A <i>Mediaan: Noord-Amerika(7,59) is laer as Afrika</i> It is better to own/buy a house in North America. <i>Dit is beter om 'n huis te koop in Noord-Amerika</i> ✓O OR/OF <table border="1"><tr><td></td><td>North America</td><td>Africa</td></tr><tr><td>Min</td><td>2,11</td><td>2,36</td></tr><tr><td>Max</td><td>15,26</td><td>27,41</td></tr><tr><td>Median</td><td>7,59 ✓A</td><td>12,19</td></tr></table> ✓A ✓A ✓A It is better to own/buy a house in North America. <i>Dit is beter om 'n huis te koop in Noord-Amerika</i> ✓O		North America	Africa	Min	2,11	2,36	Max	15,26	27,41	Median	7,59 ✓A	12,19	1A minimum 1A maximum 1A median of North America 1A median 1O conclusion OR/OF 1A minimum 1A maximum 1A median of North America 1A median 1O conclusion (5)	D L4
	North America	Africa													
Min	2,11	2,36													
Max	15,26	27,41													
Median	7,59 ✓A	12,19													
		[41]													

QUESTION/VRAAG3 [32 MARKS/PUNTE]			
Q/V	Solution/Oplossing	Explanation/Verduidelik	T&L
* 3.1.1	$C = -16\,302 + 15\,030 + 577\,196 + 297\,012 + 783\,526$ $= 1\,656\,462 \quad \checkmark A$	1MA adding all correct values 1A simplification AO (2)	F L2
* 3.1.2	$57\,730 \text{ million} = 57\,730\,000 \quad \checkmark C$ $P = \frac{4\,917\,029}{57\,730\,000} \approx 0,085 \quad \checkmark CA$ OR/OF $P = \frac{4,917029}{57,73} \approx 0,085 \quad \checkmark CA$	1C converting to number 1RT numerator 1CA denominator 1CA simplification OR/OF 1C taxpayers to millions 1RT numerator 1A denominator 1CA simplification P for rounding (4)	P L3
* 3.1.3	$\text{Mean/Gemiddelde} = \frac{577\,196\,000\,000}{2\,856\,043} \quad \checkmark C$ $= R202\,096,397 \quad \checkmark MA$ Monthly mean/Maandelikse gemiddelde $= \frac{202\,096,397}{12} \quad \checkmark MA$ $\approx R16\,841,37 \quad \checkmark CA$	1RT correct values 1C conversion 1MA dividing by 2 856 043 1MA dividing by 12 1CA simplification (5)	D L3
* 3.1.4	$\text{Percentage assessed} = \frac{16 \text{ million}}{356\,199 \text{ million}} \times 100\% \quad \checkmark RT$ $= 0,00449\% \quad \checkmark M$ $\quad \checkmark CA$ Rounded this will be 0,0% $\checkmark O$ $\text{Persentasie aangeslaan} = \frac{16 \text{ miljoen}}{356\,199 \text{ miljoen}} \times 100\%$ $= 0,00449\%$ Afgerond sal dit 0,0% wees	1RT correct values 1M percentage calculation 1CA simplification 1O explanation (4)	D L4

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
3.2.1	Monthly taxable income / <i>Maandelikse belasbare inkomste</i> $= R26\,904,22 \times \frac{100 - 7,5}{100} \quad \checkmark \text{MA}$ $= R26\,904,22 \times 92,5\% \quad \checkmark \text{MA}$ $= R24\,886,40 \quad \checkmark \text{A}$ Annual taxable income/<i>Jaarlikse belasbare inkomste</i> $= R24\,886,40 \times 12$ $= R298\,636,80 \quad \checkmark \text{CA}$ OR/OF Monthly pension payable/<i>Maandelikse pensioen</i> $= R26\,904,22 \times \frac{7,5}{100} \quad \checkmark \text{MA}$ $= R2017,82 \quad \checkmark \text{A}$ Monthly taxable income / <i>Maandelikse belasbare inkomste</i> $= R26\,904,22 - R2017,82$ $= R24\,886,40 \quad \checkmark \text{MA}$ Annual taxable income/<i>Jaarlikse belasbare inkomste</i> $= R24\,886,40 \times 12$ $= R298\,636,80 \quad \checkmark \text{CA}$ OR/OF Annual gross salary/ <i>Jaarlikse bruto inkomste</i> $= R26\,904,22 \times 12$ $= R322\,850,64 \quad \checkmark \text{A}$ Annual pension payable/<i>Jaarlikse pensioen</i> $= R322\,850,64 \times \frac{7,5}{100} \quad \checkmark \text{MA}$ $= R24\,213,80 \quad \checkmark \text{CA}$ Annual taxable income/<i>Jaarlikse belasbare inkomste</i> $= R322\,850,64 - R24\,213,80$ $= R298\,636,84 \quad \checkmark \text{CA}$	1MA subtracting 7,5% 1MA calculating % 1A simplification 1CA simplification OR/OF 1MA calculating percentage 1A calculating % 1MA simplification 1CA simplification OR/OF 1A simplification 1MA calculating percentage 1CA calculating % 1CA simplification (4)	F L3

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
3.2.2	April price without VAT/prys sonder BTW $= \frac{R172,50}{1,15} = R150 \quad \checkmark \text{CA}$ VAT in March/BTW in Maart $= R150 \times 14\% = R21 \quad \checkmark \text{MCA}$ March price with VAT/Maart prys met BTW $= R150 + R21 = R171 \quad \checkmark \text{CA}$ OR/OF March Price with VAT/Maart prys met BTW $= \frac{R172,50}{1,15} \times 1,14 \quad \checkmark \text{MCA}$ $= R171 \quad \checkmark \text{CA}$	1MA dividing by 115% 1CA simplification 1MCA 14 % VAT 1CA simplification OR/OF 2MA dividing by 115% 1MCA 114 % VAT 1CA simplification (4)	F L3
* 3.2.3 (a)	Gauteng, WCape, KZN, ECape, Mpumalanga, Limpopo, NWest, Free State, NCape $\checkmark \checkmark \text{RT}$ Gauteng, WKaap, KZN, OKaap, Mpumalanga, Limpopo, NWes, Vrystaat, NKaap $\checkmark \checkmark \text{A}$	2RT All Correct provinces 2A correct order (4)	D L2
3.2.3 (b)	It is to show that all provinces are different (tax payers' population/filers and tax due to income), or Tax collected per province differ due to a number of factors (e.g. tax payers and percentage, tax assessed and percentage; tax payers salary). $\checkmark \checkmark \text{A}$ <i>Dit is om aan te toon dat al die provinsies verskil (belastingbetalers en belasting betaalbaar)</i> Of <i>Belasting ingevorder verskil per provinsie as gevolg van verskeie faktore (b.v. belastingbetalers en persentasie, aangeslaande belasting en persentasie, belastingbetalers se salaris).</i>	2A reason (2)	D L4
* 3.2.3 (c)	$\checkmark \text{O}$ Not valid, percentage of North West is higher than that of Free State but the arrow is shorter $\checkmark \checkmark \text{O}$ Or Free State tax assessed and percentage is lower than that of the North West, however the Free State arrow is taller. Or the arrow lengths vary according to the number of tax payers. <i>Nie geldig nie, persentasie van Noordwes is hoër as Vrystaat maar die pyl is korter of Vrystaat se aangeslane belasting en persentasie is laer as Noordwes maar die Vrystaat pyltjie is hoër of die pyl lengtes varieer volgens die getal belastingbetalers.</i>	1O not valid 2O reason (3)	D L4
		[32]	

QUESTION 4/VRAAG [40 MARKS/PUNTE]			
Q/V	Solution/Oplissing	Explanation/Verduidelik	T&L
4.1.1	Number of busses/ <i>Getal busse</i> $= \frac{250\,000}{13,2} \quad \checkmark \text{MA}$ $= 18\,939,39394 \quad \checkmark \text{A}$ $\approx 19\,000 \quad \checkmark \text{R}$	1MA dividing by 13,2 1A simplification 1R rounding (3)	D L2
4.1.2 (a)	Exchange rate A: <i>Wisselkoers A</i> $\frac{\text{R}50\,000\,000\,000}{\text{R}15,97} = 3\,130\,870\,382 \quad \checkmark \text{MA} \quad \checkmark \text{A}$ Exchange rate B: <i>Wisselkoers B</i> $\frac{\text{R}50\,000\,000\,000}{\text{R}15,966728} = 3\,131\,511\,979 \text{ euro} \quad \checkmark \text{MA} \quad \checkmark \text{A}$ Difference/ <i>Verskil</i> $= (3\,131\,511\,979 - 3\,130\,870\,382) \text{ euro} \quad \checkmark \text{MCA}$ $= 641\,597 \text{ Euro} \quad \checkmark \text{CA}$ OR/OF Exchange rate A: <i>Wisselkoers A</i> $\frac{\text{R}50 \text{ billion}}{\text{R}15,97} = 3,130870382 \text{ billion/miljard} \quad \checkmark \text{MA} \quad \checkmark \text{A}$ Exchange rate B: <i>Wisselkoers B</i> $\frac{\text{R}50 \text{ billion}}{\text{R}15,966728} = 3,131511979 \text{ billion/miljard} \quad \checkmark \text{MA} \quad \checkmark \text{A}$ Difference/ <i>Verskil</i> $= (3,131511979 - 3,130870382) \text{ billion/miljard} \quad \checkmark \text{MA}$ $= 641\,597 \text{ Euro} \quad \checkmark \text{CA}$	1MA dividing by exchange rate 1A simplification 1MA dividing by exchange rate 1A simplification 1MCA subtracting 1CA simplification OR/OF 1MA dividing by exchange rate 1A simplification 1MA dividing by exchange rate 1A simplification 1MA subtracting 1CA simplification (6)	F L3

Q/V	Solution/Oplossing	Explanation/Verduidelik	T&L
4.1.2 (b)	✓O Exchange rate B, it gives a higher value (€641 597 more)/shows more money will be made for the taxis <i>Wisselkoers B, dit gee 'n hoër waarde ((€641 597 meer)</i> OR/OF Exchange rate B, it is stronger against the Euro. <i>Wisselkoers B, dit is sterker teen die Euro</i>	CA FROM 4.1.2(a) 1O choice 2O reason (3)	F L4
4.1.3	Total parts/ <i>Totale dele</i> = 4 + 5 + 75 = 84 ✓MA Using/<i>Gebruik</i> taxi = 15 000 000 $\frac{75}{84} \times \text{total number of commuters} = 15\,000\,000$ ✓MA $\frac{75}{84} \times \text{totale aantal pendelaars} = 15\,000\,000$ Total number of commuters /<i>totale aantal pendelaars</i> $= 15\,000\,000 \times \frac{84}{75} = 16\,800\,000$ ✓A Number not using a taxi / <i>Getal wat nie 'n taxi gebruik nie</i> = 16 800 000 – 15 000 000 = 1 800 000 ✓CA OR/OF Train : Bus : Taxi / <i>Trein : Bus : Taxi</i> 4 : 5 : 75 Not using a taxi/<i>Nie taxi gebruik nie</i> = 4 + 5 = 9 ✓MA Number not using taxi/ <i>Getal wat nie 'n taxi gebruik nie</i> $= \frac{15\,000\,000}{9} \times 9$ ✓MA = 1 800 000 ✓CA	1MA simplification 1MA working with ratio 1A simplification 1CA simplification OR/OF 1MA adding 1A simplification 1MA working with ratio 1CA simplification	D L3

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
	OR/OF Not using a taxi/Nie taxi gebruik nie = $4 + 5 = 9$ ✓MA ✓A Using ratio/Gebruik verhouding: $9 : 75$ $n : 15 \text{ million/miljoen}$ $\therefore 75n = 9 \times 15 \text{ million/miljoen}$ ✓MA $n = 1,8 \text{ million/miljoen}$ or/of $1\,800\,000$ ✓CA OR/OF Not using a taxi/Nie taxi gebruik nie = $4 + 5 = 9$ ✓MA ✓A Using ratio/Gebruik verhouding: $9 : 75$ $15\,000\,000 \div 75 = 200\,000$ ✓MA $200\,000 \times 9 = 1\,800\,000$ ✓CA	OR/OF 1MA adding 1A simplification 1MA working with ratio 1CA simplification OR/OF 1MA adding 1A simplification 1MA working with ratio 1CA simplification (4)	
* 4.1.4	Distance to moon and back / <i>Afstand maan toe en terug</i> $= 384\,402 \times 2$ ✓MA $= 768\,804 \text{ km}$ ✓A Number of trips/aantal ritte $= \frac{19\,000\,000\,000}{768\,804}$ ✓MCA $= 24\,713,71117$ ✓CA Valid, more than 24 000 ✓O <i>Geldig, dit is meer as 24 000</i> OR/OF Distance travelled for 24 000 trips to moon and back <i>Afstand afgelê vir 24 000 ritte maan toe en terug</i> $= 24\,000 \times 384\,402 \text{ km} \times 2$ ✓MA ✓MA $= 18\,451\,296\,000 \text{ km}$ ✓✓A Taxis travel/ry $19\,000\,000\,000 \text{ km}$ Valid, it will more than 24 000 trips ✓O <i>Geldig, dit sal meer as 24 000 ritte wees</i> OR/OF Kilometres travelled per trip/ Kilometer per rit $= 19\,000\,000\,000 \div 24\,000 = 791\,666,6$ ✓MA ✓A One way distance /Eenrigting afstand $= 791\,666,6 \div 2 = 395\,833 \text{ km}$ ✓MA ✓CA It is more than the distance to the moon. <i>Dit is meer as die afstand na die maan toe.</i> ✓O	1MA multiplying with 2 1A simplification 1MCA dividing 1CA simplification 1O conclusion OR/OF 1MA multiplying with 2 1MA multiplying 2A simplification 1O conclusion OR/OF 1MA dividing by 24 000 1A simplification 1MA dividing by 2 1CA simplification 1O conclusion (5)	M L4

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
4.2.1	9 Jan 2015 to 9 Jan 2016 – 365 days/dae ✓A 9 Jan 2016 to 9 Jan 2017 – 366 days/dae 9 Jan 2017 to 9 Jan 2019 – 730 days/dae 9 Jan 2019 to 3 Jan 2020 – 359 days /dae ✓A Total days/ Totale dae ✓MCA $= 365 + 366 + 730 + 359 = 1\,820$ ✓CA OR/OF Total days / Totale dae ✓A ✓A ✓MCA $= 365 \times 5 + 1 - 6$ $= 1\,820$ ✓CA	1A number of days in full year 1A days till 3 Jan 1MCA adding 1CA simplification OR/OF 1A number of days in full year 1A days till 3 Jan (subtracting 6) 1MCA adding 1 1CA simplification (4)	M L2
4.2.2	Share price in cent/ aandeel prys in sent $= 2063 - 1268$ ✓MA $= 795$ ✓CA	1MA subtracting converted amount 1CA simplification (2)	F L2
4.2.3 (a)	Percentage change/Persentasie verandering $= \frac{\text{New} - \text{old}}{\text{old}} \times 100\%$ $= \frac{2\,063 - 2\,138}{2\,138} \times 100\%$ ✓RT ✓SF ✓MA $= -3,50795\%\dots$ ✓CA ✓O Correct, it went down by 3,51% rounded to 2 decimal places. Korrek, dit het gedaal met 3,51% afgerond tot 2 desimale plekke OR/OF Percentage change/ Persentasie verandering ✓RT $= \frac{2063}{2138} \times 100\% \approx 96,49\%$ ✓A ✓M ✓CA $100\% - 96,49\% = 3,51\%$ ✓O Correct, it went down by 3,51% Korrek, dit het gedaal met 3,51%	1RT correct values 1SF into the % change formula 1MA % change calculation 1CA simplification 1O conclusion OR/OF 1RT correct values 1A simplification 1M % change calculation 1CA simplification 1O conclusion	F L4

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
	OR/OF Amount /bedrag = $2\ 138c \times 3,51\%$ ✓RT $= 75\ c$ ✓MA Decrease / Afname = $2\ 138\ c - 75\ c$ ✓CA $= 2\ 063\ c$ Correct, it went down by 3,51% ✓O Korrek, dit het gedaal met 3,51% OR/OF Percentage change = $100\% - 3,51\% = 96,49\%$ ✓M Share price = $2\ 138c \times 0,9649$ ✓RT $= 2\ 062,9562 = 2\ 063c$ ✓CA It is correct. It was rounded to the nearest cent. ✓O Dit is korrek. Dit is afgerond tot die naaste sent	OR/OF 1RT correct values 1MA % change calculation from previous balance 1A simplification 1CA simplification 1O conclusion OR/OF 1M % change calculation 1RT correct values 1A simplification 1CA simplification 1O conclusion (5)	
* 4.2.3 (b)	Went down/Daal 2016, 2017, 2019, and 2020 ✓O Hence/Gevolgtlik $\frac{4}{5} \times 100\% = 80\%$ ✓O Statement is correct. ✓O Bewering is korrek. OR/OF ✓O Correct, share prices went down in 2016, 2017, 2019 and 2020 but went up 2018 ✓O $\frac{4}{5} \times 100\% = 80\%$ ✓O Korrek, aandeel pryse het gedaal in 2016, 2017, 2019 en 2020 maar styg in 2018 $\frac{4}{5} \times 100\% = 80\%$	1O reasoning 4 years going down 1O verifying the percentage 1O conclusion OR/OF 1O conclusion award with justification 1O reasoning 4 years going down 1O verifying the percentage (3)	D L4

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
4.2.4	Buying / <i>koop</i> $= 5\,000 \times 1\,611^{\checkmark\text{RT}} = 8\,055\,000 \text{ c} = \text{R}80\,550^{\checkmark\text{A}}^{\checkmark\text{C}}$ Sell/ <i>verkoop</i> $= 5\,000 \times 2\,350 = 11\,750\,000 \text{ c} = \text{R}117\,500^{\checkmark\text{CA}}$ Profit / <i>Wins</i> = $\text{R}117\,500 - \text{R}80\,550 = \text{R}36\,950^{\checkmark\text{CA}}$ OR/OF Difference in price / <i>Verskil in prys</i> $= 2\,350 - 1\,611^{\checkmark\text{RT}} \text{ c}$ $= 739 \text{ c}^{\checkmark\text{A}}$ $= \text{R}7,39^{\checkmark\text{C}}$ Profit / <i>Wins</i> = $\text{R}7,39 \times 5\,000^{\checkmark\text{MCA}}$ $= \text{R}36\,950^{\checkmark\text{CA}}$	1RT correct values 1A buy 1C converting to rand 1CA sell 1CA simplification OR/OF 1RT correct values 1A difference 1C converting to rand 1MCA multiplying 1CA simplification (5)	F L3
		[40]	
	TOTAL/TOTAAL: 150		