



KWAZULU-NATAL PROVINCE

EDUCATION
REPUBLIC OF SOUTH AFRICA



**NATIONAL
SENIOR CERTIFICATE**

GRADE 12

MATHEMATICAL LITERACY

COMMON TEST

JULY 2021

MARKS: 75

TIME: 1 ½ hours

**This question paper consists of 10 pages including an Answer sheet and
an Addendum with 2 Annexures.**

INSTRUCTIONS AND INFORMATION

1. This question paper consists of FOUR questions. Answer ALL the questions.
2.
 - 2.1 Use the ANNEXURE in the ADDENDUM and the ANSWER SHEET to answer the following questions:
 - ANNEXURE A for QUESTION 1.1
 - ANNEXURE B for QUESTION 3.1 and 3.2
 - 2.2 Answer QUESTION 2.2.2 on the attached ANSWER SHEET.
 - 2.3 Write your name in the space 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 The ANNEXURE A shows a CRX Network Installations statement. The company is contracted by schools to install and manage their network systems.

Use ANNEXURE A to answer the questions that follow.

- 1.1.1 Explain the meaning of *credit interest* with reference to the CRX statement. (2)
- 1.1.2 Write down the balance (excluding interest) that was brought forward on the last day of the previous month. (2)
- 1.1.3 Calculate the annual interest rate that was used on the balance brought forward to get the credit interest.

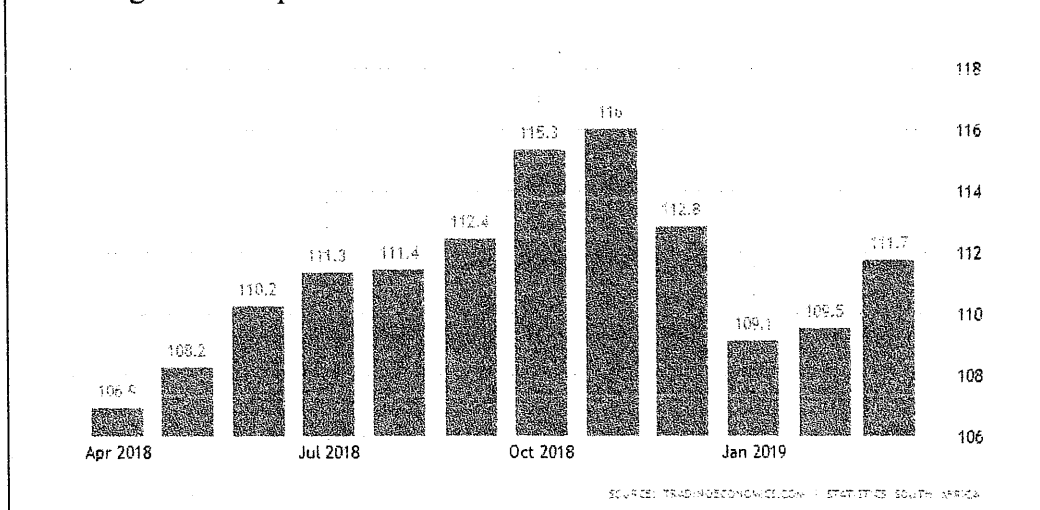
You may use the following formula:

$$\text{Annual Interest Rate} = \frac{\text{Credit Interest} \times 365}{\text{Balance Brought Forward}} \times 100\% \quad (3)$$

- 1.1.4 Calculate the values (i) to (iv). (4)
- 1.1.5 What is the meaning of the negative signs on some amounts in the statement? (2)
- 1.1.6 Calculate the total amount credited to CHS Network Installations account. (3)

1.2

The graph below shows how the Transportation Consumer Price Index (TCPI) has changed from April 2018 to March 2019.



- 1.2.1 Explain the meaning of the term *inflation* with reference to the given context above. (2)
- 1.2.2 What was the value of the TCPI in August 2018? (2)

- 1.2.3 Calculate the percentage change in the TCPI from January 2019 to March 2019.

You may use the following formula:

$$\text{Percentage Change} = \frac{\text{March 2019 TCPI} - \text{January 2019 TCPI}}{\text{January 2019 TCPI}} \times 100\% \quad (3)$$

[23]

QUESTION 2

- 2.1 Lethi Nyandeni is a business woman who travels abroad quite often. The table below shows the exchange rates for different currencies.

Standard Bank	
FOREX CLOSING INDICATION RATES FOR 17 May 2021 as at 16:00	
Rates for amounts up to R 200 000	
Closing rate history for date :	2021-05-17 16:00:33.374 ▾ Load

Country	Cur	Bank Buying		Bank Selling	
		T/T	Cheques	Cheques	Foreign Notes and T/T

QUOTATIONS ON BASIS RAND PER UNIT FOREIGN CURRENCY

BRITISH POUND	GBP	19.6355	19.5898	19.5130	20.1347	20.2297
EURO	EUR	16.9340	16.8869	16.8095	17.3776	17.4076
UNITED STATES DOL	USD	13.9575	13.8947	13.9500	14.2750	14.2750

QUOTATIONS ON BASIS FOREIGN CURRENCY PER R1

UAE DIRHAM	AED	.2666		.2666	.2528	.2528
AUSTRALIAN DOLLAR	AUD	.0952	.0967	.0962	.0872	.0862
BOTSWANA PULA	BWP	.8201	.8254	.8201	.7014	.7014
CANADIAN DOLLAR	CAD	.0923	.0927	.0953	.0787	.0787
SWISS FRANC	CHF	.0670	.0672	.0780	.0605	.0595
CHINESE YUAN	CNY	.5073		.4696	.4039	.4315

Forex Fees – Buying and Selling Foreign Currency

Transaction	Fee	Minimum	Maximum
Foreign notes (except CMA currencies)	2,28%	R100,80	-
Admin fee when purchasing foreign notes (Waived for foreign note purchases equivalent to R500 or less)	R74,55	-	-
CMA Currency (eSwatini Lilangeni, Namibian Dollar and Lesotho Loti)	3,8%	R126	-

Source: [www.standardbank.co.za]

- 2.1.1 Which country above had a foreign note Bank Buying rate of 0,0962 to R1? (2)
- 2.1.2 Nyandeni's accommodation in America costs \$45 (USD) per night. Convert this amount to South African rand using the foreign note Bank Selling rate. (2)
- 2.1.3 Nyandeni has R50 000 and she wants to purchase Euro notes (€). Calculate the transaction fee she will be charged. (4)
- 2.1.4 If Nyandeni remains with €102,80 change when she returns from France, calculate the amount she will get from Standard Bank. (2)

2.2

In South Africa, headline inflation (total inflation within an economy) rates are different for different provinces. The table below shows provincial rates and the national inflation rates for 2017/2018.

Province	NW	L	NC	KZN	M	FS	EC	SA	G	WC
2017	4,5%	4,9%	4,2%	5,0%	4,3%	5,0%	5,3%	5,3%	5,2%	6,2%
2018	3,6%	3,7%	3,9%	3,9%	4,0%	4,3%	4,4%	4,7%	4,8%	5,3%

Source: [www.thebricspost.com]

2.2.1 Which graph will best help to display the data above? Justify your choice.

(2)

2.2.2 Draw the missing bars on the provided answer sheet.

(3)

[15]

QUESTION 3

3.1

Baz Bus is a hop on hop off bus service in South Africa. The timetable in ANNEXURE B shows the arrival and departure times along the route from Cape Town to Port Elizabeth and Port Elizabeth to Cape Town.

Use the timetable in ANNEXURE B to answer the questions that follow.

- 3.1.1 Calculate the time it takes for passengers to board the bus in Cape Town. (2)
- 3.1.2 Determine how many stops there are along the way to Port Elizabeth and state which two stops are less than 15 minutes each. (2)
- 3.1.3 Determine the time taken to travel to Port Elizabeth from Cape Town by bus. (3)

3.2

The map in ANNEXURE B shows the route taken by Baz Bus from Cape Town to Port Elizabeth. The time and distance travelled by car on the same route is different from those of the Baz Bus.

Refer to the map in ANNEXURE B and answer the questions that follow.



- 3.2.1 Measure the distance on the map from Cape Town to Port Elizabeth.

Hence calculate the actual distance using the scale of 1: 9 600 000. (4)

- 3.2.2 A car travels this distance in 8 hours 24 minutes. A statement was made that the car travels twice the speed of the bus.

Verify, using calculations, if this statement is CORRECT.

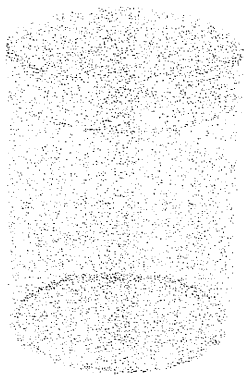
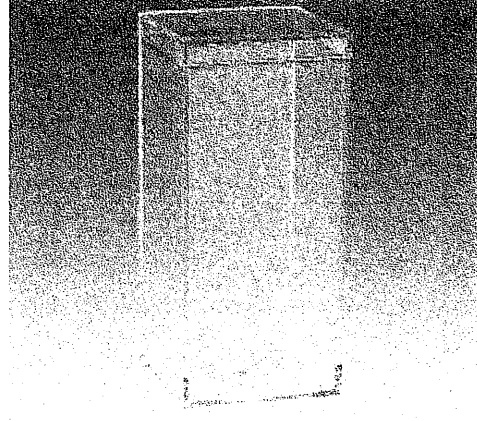
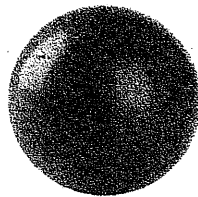
You may use the formula:

$$\text{Speed} = \text{Distance} \div \text{time} \quad (6)$$

[17]

QUESTION 4

Owethu makes chocolates for weddings. She is investigating different types of containers in which she will package the chocolate.

CYLINDER	RECTANGULAR BASE	CHOCOLATE BALL
		
Dimensions Radius of base = 1,70 cm Height of cylinder = 10cm	Dimensions Breadth = 3,5 cm Length = 3,95cm Height = 10cm	Dimensions Radius = 1,5 cm

You may use the following formulae:

Volume of a rectangular prism = $l \times b \times h$

Volume of a Cylinder = $\pi \times r^2 \times h$; where $\pi = 3,142$

SA of a rectangular prism = $2(l \times b) + 2(b \times h) + 2(l \times h)$

SA of a Cylinder = $2\pi r^2 + 2\pi rh$; where $\pi = 3,142$

Use the information above and answer the questions that follow.

- 4.1 Determine how many chocolates will fit in the cylinder. (3)
- 4.2 The volume of each chocolate ball is $14,14\text{cm}^3$. Determine which container would be more suitable to package the chocolates. (6)
- 4.3 Calculate the difference in the surface area of both containers. (6)

4.4 Owethu receives an order for 600 chocolates.

Calculate the cost of the order if:

chocolate ball costs R4,60 each

container cost R2,73 each

A cardboard box cost R6,22 and can fit 10 containers

labels for the container costs R3,45each

(5)

[20]

TOTAL MARKS: 75

NAME: _____

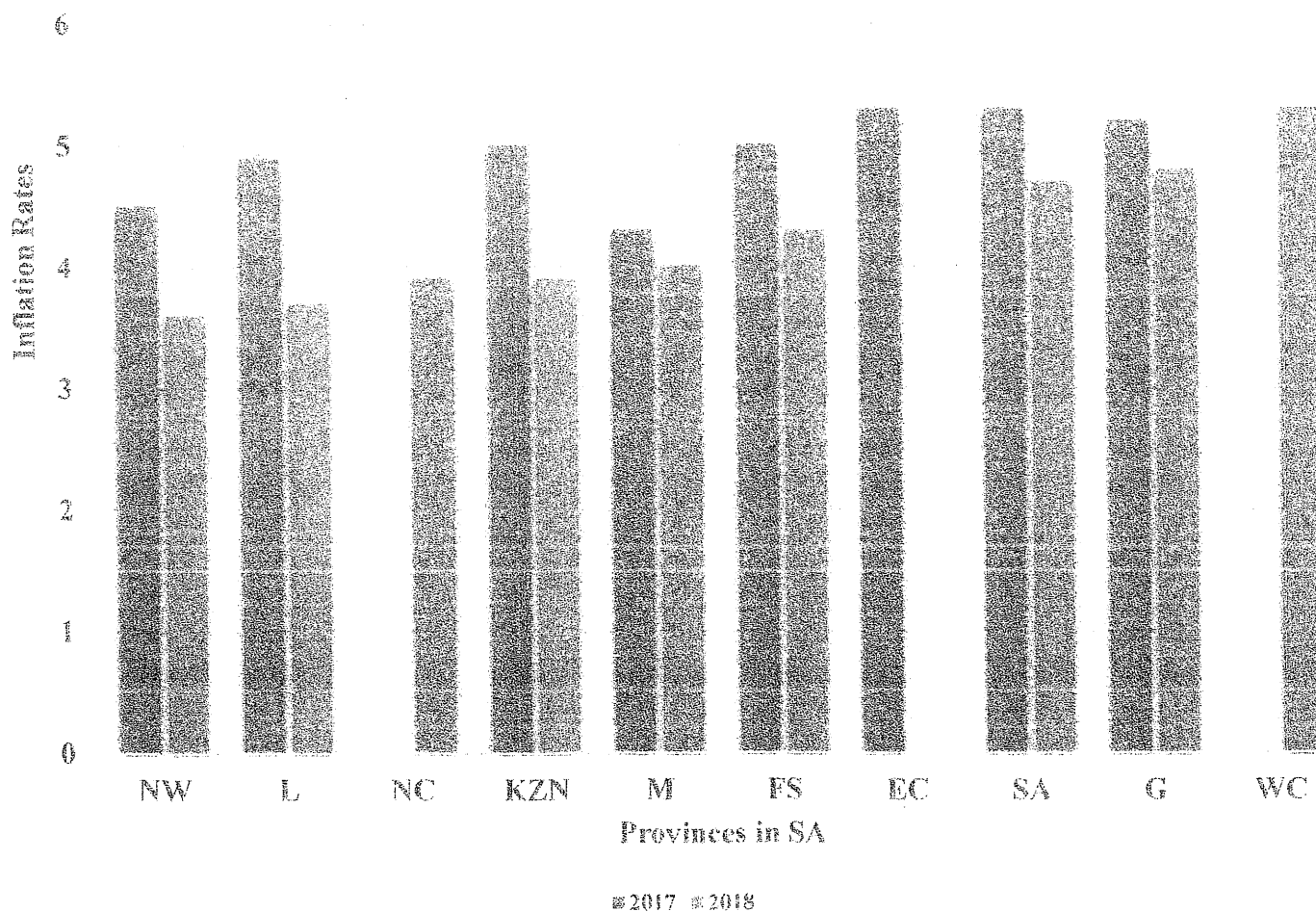
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ANSWER SHEET

QUESTION 2.2.2

Provincial vs National Inflation Rates



Source: [www.google.com]



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ADDENDUM

JULY 2021

This Addendum consists of 3 pages with 2 Annexures.

ANNEXURE A

QUESTION 1.1

CRX NETWORK INSTALLATIONS STATEMENT FOR APRIL 2021

T G BANKSTATEMENT OF ACCOUNTACCOUNT NUMBER: 016754328770

CRX NETWORK INSTALLATIONS (PTY)
No. 487 John Ross Highway
Eshowe.
3815

Contact No: 035 474 0301
Fax No. 035 474 0300
Email: crxinst@crx.co.za

Period: 2021/04/01 to 2021/04/30

Date	Description	Transaction (R)	Balance (R)
	Balance brought forward		85 960,00
2021/04/01	Credit Interest	26,61	85 986,61
2021/04/03	Premises Rent: Debit Order	- 8 500,00	(i)
2021/04/03	Isolezwe Security: Debit Order	- 9 709,00	67 777,61
2021/04/09	Cheque Deposit: M A High School	15 700,00	(ii)
2021/04/15	Internet Transfer: Vector Academy	11 233,89	94 711,50
2021/04/23	Cheque Deposit: Eshowe Maths Academy	6 597,92	101 309,42
2021/04/30	Salary: N Crocs	-14 800,00	86 509,42
2021/04/30	Cheque Account Fees	-480,00	(iii)
2021/04/30	Balance carried forward		(iv)

Source: [extract from CRX statement of account]

ANNEXURE B

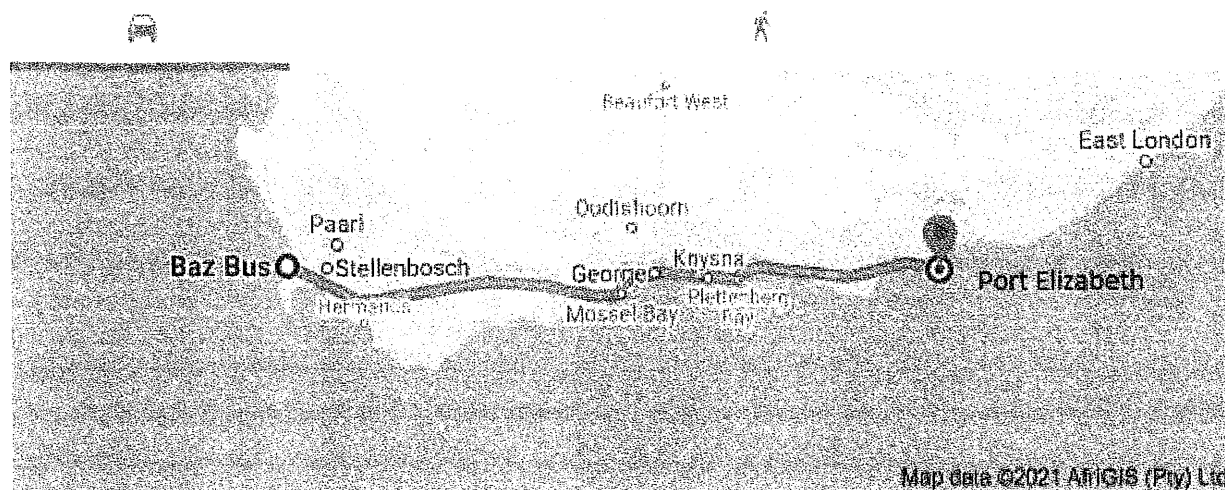
QUESTION 3.1

CAPE TOWN ← PORT ELIZABETH		
CAPE TOWN		PORT ELIZABETH
07:15 → 08:30	CAPE TOWN	21:30 → 22:15
09:00 → 09:15	STELLENBOSCH	20:15 → 20:30
09:45 → 10:00	HERMANUS	19:30 → 19:45
11:45 → 12:00	SWELLENDAM	18:00 → 18:15
13:45 → 14:15	MOSSSEL BAY	15:30 → 15:45
15:15 → 15:30	GEORGE (ODDTSHOORN)	14:30 → 14:50
15:45 → 16:00	WILDERNESS / VICTORIA BAY	13:30 → 13:45
16:15 → 16:20	SEDFIELD	13:15 → 13:20
16:35 → 16:45	KNYSNA	12:45 → 13:00
17:45 → 18:00	PLETTENBERG BAY	12:00 → 12:15
18:15 → 18:30	THE CRAGS / BLOUKRANS BRIDGE	11:15 → 11:30
19:00 → 19:15	STORMS RIVER VILLAGE	10:15 → 10:45
20:30 → 21:00	JEFFREYS BAY (ST FRANCIS BAY)	08:30 → 09:00
21:45 → 22:15	PORT ELIZABETH	06:45 → 07:30

QUESTION 3.2

○ Baz Bus, 32 Burg St, Cape Town City Centre, Cape Town, 8001

○ Port Elizabeth



8 hr 24 min

via N2



DIRECTIONS

[Source:www.bazbus.com]



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MARKING GUIDELINE

JULY 2021

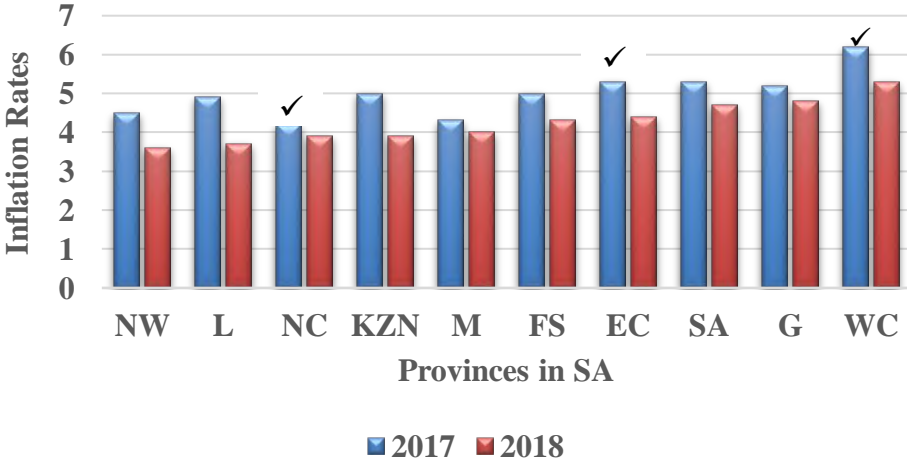
MARKS: 75

Symbol	Explanation
M	Method
M/A	Method with Accuracy
CA	Consistent Accuracy
A	Accuracy (Answer)
AO	Answer only full marks
C	Conversion
S	Simplification
RT / RG / RM/ RP	Reading from table / Reading from graph / Reading from map/Reading from plan
F	Choosing the correct formula
E	Explanation
D	Correct definition
SF	Substitution in formula
O	Opinion
J	Justification
P	Penalty e.g. for no units, incorrect rounding, etc
R	Rounding off / Reason

This marking guideline consists of 5 pages.

Ques	Solution	Explanation	T/L
QUESTION 1 [23 MARKS]			
1.1.1	Interest earned on the positive balance (R85 960,00) brought forward✓✓E	2E correct explanation (2)	F L1
1.1.2	R85 960,00✓✓RT	2RT correct reading (2)	F L1
1.1.3	$\text{Annual Interest Rate} = \frac{\checkmark\text{MA}}{\text{R85 960}\checkmark\text{M}} \times 100\%$ $= \frac{\text{R26,61} \times 365}{\text{R85 960}} \times 100\%$ $= 11,30\%\checkmark\text{A}$	1MA multiplying by 365 1M dividing by R85 960 1A correct answer (3)	F L2
1.1.4	(i) R77 486,61✓A (ii) R83 477,61✓A (iii) R86 029,42✓A (iv) R86 029,42✓A	 1A correct amount 1A correct amount 1A correct amount 1A correct amount (4)	F L2
1.1.5	Money that went out of the account✓✓E	2E correct explanation (2)	F L1
1.1.6	$\text{Total Amount Credited} = (\text{R26,61} + \text{R15 700}) + (\text{R11 233,89} + \text{R6 597,92})\checkmark\text{M}$ $= \text{R33 558,42}\checkmark\text{A}$	1M for (R15 700 + R26,61) 1M for (R11 233,89 + R6 597,92) 1A correct answer (3)	F L1
1.2.1	Increase in the price/cost of transportation from April 2018 to March 2019✓✓E	2E for correct explanation (2)	F L1
1.2.2	111,4✓✓RG	2RG correct reading from graph (2)	F L1
1.2.3	$\text{Percentage Change} = \frac{111,7 - 109,1\checkmark\text{M}}{109,1\checkmark\text{M}} \times 100\%$ $= 2,38\%\checkmark\text{A}$	1M numerator 1M denominator 1A correct percentage (3)	F L2
[23]			

QUESTION 2 [15 MARKS]

2.1.1	Australia✓✓RT	2RT reading from table (2)	F L1
2.1.2	$\$45 = 45 \times R14,2750$ ✓M $= R642,38$ ✓C	1M multiplying by R14,2750 1C conversion (2)	F L1
2.1.3	Fee = $2,28\% \times R50\,000$ ✓SF $= R1\,140$ ✓S Total charge = $R1\,140 + R74,55$ ✓M $= R1\,214,55$ ✓A	1SF correct substitution 1S simplifying 1M adding admin fee (R74,55) 1A answer (4)	F L3
2.1.4	$\text{€}102,80 = 102,80 \times R16,8095$ ✓M $= R1\,728,02$ ✓C	1M multiplying by R16,8095 1C conversion (2)	F L2
2.2.1	A compound bar graph.✓M It makes it easy to compare inflation rates for different provinces and national rates.✓J	1M correct graph 1J justification (2)	DH L4
2.2.2	<p style="text-align: center;">Provincial vs National Inflation Rates</p>  <p style="text-align: center;">■ 2017 ■ 2018</p>	<p>1M for NC bar 1M for EC bar 1M for WC bar (3)</p>	DH L3

[15]

QUESTION 3 [17 MARKS]			
Ques	Solution	Explanation	T&L
3.1.1	Boarding time = 8:30 – 7:15 ✓MA = 1 hour 15 minutes ✓A	1MA subtracting 1A correct answer AO (2)	MP L1
3.1.2	12 stops ✓A Sedgefield and Kysna ✓A	1A correct answer 1A correct answer (2)	MP L1
3.1.3	Duration of journey = 21:45 – 8:30 ✓M = 13 hours 15 minutes ✓CA	1A correct times 1M subtracting 1CA answer AO (3)	MP L2
3.2.1	Measure distance = 9cm ✓M Actual distance = $\frac{9\text{cm} \times 9600000}{100000}$ ✓MA ✓C = 864 km ✓CA	Accept 1mm leeway 1M measuring distance 1MA multiplying by scale 1C conversion 1CA answer (4)	MP L2
3.2.2	Speed of car = $\frac{864}{8,4}$ ✓SF ✓C = 102,86 km/h ✓CA Speed of bus = $\frac{864}{13,25}$ = 65,21 km/h ✓CA Comparison of speed = $\frac{102,86}{65,21}$ ✓M = 1,58 times Statement is INCORRECT	CA from Q3.1.3 and Q3.2.1 1SF substitution 1C conversion to hours 1CA speed 1CA speed 1M dividing by 65,21 1O explanation (6)	MP L3
[17]			

QUESTION 4 [20 MARKS]			
Ques	Solution	Explanation	T & L
4.1.	Diameter of chocolate = $1,5 \times 2$ $= 3\text{cm} \checkmark \text{A}$ Base of Cylinder = $3,4 \text{ cm} \div 3$ $= 1,13 \checkmark \text{A}$ Height of cylinder = $10 \div 3$ $= 3,33$ $= 3 \text{ chocolates} \checkmark \text{CA}$	1A diameter 1A answer 1CA answer (3)	MM L3
4.2	Volume of a rectangular prism = $3.5 \times 3.95 \times 10 \checkmark \text{SF}$ $= 138.25 \text{cm}^3 \checkmark \text{A}$ Volume of a Cylinder = $3,142 \times 1,7^2 \times 10 \checkmark \text{SF}$ $= 90.80 \text{ cm}^3 \checkmark \text{A}$ Volume of 3 chocolates = $14,14 \times 3 \checkmark \text{M}$ $= 42,42$ Cylinder is the better option $\checkmark \text{O}$	1SF substitution 1A correct answer 1SF substitution 1A correct answer 1M multiplying by 3 1O opinion (6)	MM L3
4..3	$\checkmark \text{SF}$ SA of a prism = $2(3.95 \times 3.5) + 2(3.5 \times 10) + 2(3.95 \times 10)$ $= 176.65 \text{cm}^2 \checkmark \text{A}$ SA of a Cylinder = $2 \times 3.142 \times 1.7^2 + 2 \times 1.7 \times 10 \checkmark \text{SF}$ $= 124,99 \text{ cm}^2 \checkmark \text{A}$ Difference = $176,65 - 124.99 \checkmark \text{M}$ $= 51.66 \text{cm}^2 \checkmark \text{CA}$	1SF substitution 1A correct answer 1SF substitution 1A correct answer 1M subtracting 1CA answer (6)	MM L3
4.4	Total cost = $\checkmark \text{M} \quad \checkmark \text{M} \quad \checkmark \text{M} \quad \checkmark \text{M}$ $(\text{R}4.60 \times 600) + (\text{R}2.73 \times 200) + (3.45 \times 200) + (\text{R}6.22 \times 20)$ $= \text{R}4120 \checkmark \text{CA}$	1M cost of chocolate 1M cost of label 1M cost of container 1M cost of cardboard box 1CA answer (5)	F L3
[20]			
TOTAL MARKS:75			