



basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

SENIOR CERTIFICATE EXAMINATIONS

MATHEMATICAL LITERACY P1

2018

MARKING GUIDELINES

MARKS: 150

SYMBOL	EXPLANATION
M	Method
MA	Method with accuracy
MCA	Method with consistent accuracy
CA	Consistent accuracy
A	Accuracy
C	Conversion
S	Simplification
RT/RG/RP	Reading from a table/graph/plan
SF	Correct substitution in a formula
O	Opinion/Example/Definition/Explanation
P	Penalty, e.g. for no units/incorrect rounding off, etc.
R	Rounding off
NPR	No penalty rounding or omitting units
AO	Answer only, if correct, full marks

NOTE: If there is an additional incorrect answer mark as follows:
If the solution contains the word "OR", then penalty of 1 mark
If the solution contains the word "AND", then mark only the first solution with a penalty of 1 mark.

These marking guidelines consist of 15 pages.

Question 1 [31 MARKS]AO Full Marks			
Ques	Solution	Explanation	T/L
1.1.1	Horizontal/double/compound/multiple \checkmark O bar graph \checkmark O	1O type 1O bar graph (2)	D L1
1.1.2	71,6%; 51%; 10,3%; 7,3%; 6,6% \checkmark RT \checkmark A	1RT reading all correct values 1A descending order If Johannesburg is used max 1 mark (2)	D L1
1.1.3	Step 6 $\checkmark\checkmark$ A	2A identifying correct Step Accept any identification in step 6 for Cape Town (2)	F L1
1.1.4	Cape Town $\checkmark\checkmark$ A	2A stating Cape Town Accept JHB Step 1 full marks (2)	F L1
1.1.5	Cost = 3,5 kℓ \checkmark RT \times R7,14 = R24,99 \checkmark A	1RT for R7,14 1A simplification CA only if R4,56 is used Accept R25 full marks (2)	F L1
1.1.6	Numerical $\checkmark\checkmark$ A	2A stating numerical Accept numerically full marks (2)	D L1
1.2.1	Selling price minus profit $\checkmark\checkmark$ A OR The amount of money needed (for raw material, labour, etc.) to make an item $\checkmark\checkmark$ A	2A correct definition Accept: Amount you pay for buying stock/clocks Money you receive without profit. Price before mark-up is added. (2)	F L1
1.2.2	Cost price = R3 350 \checkmark RT $-$ R914 = R2 436 \checkmark A	1RT correct values 1A simplification (2)	F L1

Ques	Solution	Explanation	T/L
1.2.3	✓A 22:08 ✓A	1A correct hours 1A correct minutes (2)	M L1
1.2.4	✓MA Total profit = R914 + R60 + R573 + R1623 = R3170,00 ✓CA	1MA adding all correct values 1CA simplification (2)	F L1
1.3.1	Converting scale reading ✓M = 394 g ÷ 1 000 = 0,394 kg ✓A	1M dividing by 1 000 1A simplification (2)	M L1
1.3.2	✓M New reading = 394 – 128 = 266g ✓A	1M subtracting correct values 1A simplification (2)	M L1
1.3.3	✓M ✓M ✓A Peach = 394 – 128 – (128 ÷ 2) = 394 – 192 = 202 g OR Plum = 128 g ÷ 2 ✓M = 64 g ✓A Peach = 266 g – 64 g ✓M = 202 g	1M subtraction from 394 1M dividing 128 by 2 1A for 192 OR 1M dividing pear by 2 1A plum 64g 1M subtracting two values (3)	M L1
1.3.4	0% OR 0 OR $\frac{0}{3}$ ✓✓A	2A solution <div style="border: 1px solid black; padding: 2px; display: inline-block;">Accept impossible - full marks</div> (2)	P L1
1.3.5	394g : 128g ✓M 197 : 64 ✓A	1M concept of ratio 1A ratio without units <div style="border: 1px solid black; padding: 5px; margin-top: 10px;">Accept: Reverse the order with simplification one mark Unit ratio 1: 0,325 OR 3,08:1 one mark Correct fractional form – full marks</div> (2)	M L1
		[31]	

QUESTION 2 [38MARKS]			
Ques	Solution	Explanation	T/L
2.1.1	December ✓✓A OR The twelfth month of the year ✓✓A OR The last month of the year ✓✓A	2A correct month <div style="border: 1px solid black; padding: 5px; width: fit-content;"> Accept: Mid Nov. to mid Dec. } Full Nov / Dec } marks 12 } 8/9/15 Dec max one mark </div> (2)	F L1
2.1.2	The overall limit exceeded ✓✓A	2A correct code description <div style="border: 1px solid black; padding: 5px; width: fit-content;"> Accept: Owe supplier } Full Funds exhausted } marks </div> Code (870) only max one mark (2)	F L1
2.1.3	Dr Dhlamini ✓✓RT	2RT name (2)	F L1
2.1.4	Increased amount = $R736,90 \times \frac{6,3}{100} = R46,42$ ✓MA New price = $R46,42 + R736,90 = R783,32$ ✓MCA ✓CA OR Increased percentage = $100\% + 6,3\% = 106,3\%$ ✓MA New price = $R736,90 \times \frac{106,3}{100} = R783,32$ ✓MCA ✓CA	1MA calculating 6,3% 1MCA adding the values 1CA simplification OR 1MA calculating 106,3% 1MCA multiplication 1CA simplification (3)	F L2

Ques	Solution	Explanation	T/L
2.1.5	$\begin{aligned} \text{Tax claimable} &= \text{R5 326,66} - \text{R445,10} \\ &= \text{R4 881,56} \end{aligned}$	AO 1RT correct values 1A Simplification (2)	F L2
2.1.6	$\text{Money the member must pay to the suppliers.}$	2O for correct definition <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> Accept: Full Marks Amount of money not paid by the scheme. Money owed to the scheme. </div> (2)	F L1
2.1.7	$\begin{aligned} \text{Total amount} &= \text{R173,03} + \text{R117,44} + \text{R61,50} + \text{R80,98} + \text{R46,80} \\ &= \text{R479,75} \end{aligned}$ <p style="text-align: center;">OR</p> $\begin{aligned} \text{Total amount} &= \text{R1 661,75} - \text{R736,90} - \text{R445,10} \\ &= \text{R479,75} \end{aligned}$	1RT all correct values 1M adding values <p style="text-align: center;">OR</p> 1RT all correct values 1M subtracting values (2)	F L1
2.2.1	Value Added Tax	2A acronym written out (2)	F L1
2.2.2	$\begin{aligned} \text{VAT} &= \text{R988,00} \times \frac{14\%}{114\%} \\ &= \text{R121,333333} \\ &\approx \text{R121,33} \end{aligned}$ <p style="text-align: center;">OR</p> $\begin{aligned} \text{VAT} &= \text{R988,00} \div 1,14 \times 0,14 \\ &= \text{R121,333333} \\ &\approx \text{R121,33} \end{aligned}$ <p style="text-align: center;">OR</p> $\begin{aligned} \text{VAT} &= \text{R988} - \left(\frac{\text{R988}}{1,14} \right) \\ &= \text{R988} - \text{R866,666..} \\ &\approx \text{R121,33} \end{aligned}$	1RT using correct value 1M multiplying by $\frac{14\%}{114\%}$ 1A Simplification <p style="text-align: center;">OR</p> 1RT using correct value 1M dividing by 1,14 and multiplying by 0,14 1A Simplification <p style="text-align: center;">OR</p> 1RT using correct value 1M dividing by 1,14 and subtracting 1A Simplification (3)	F L2

Ques	Solution	Explanation	T/L
2.2.3	$\text{Difference} = \text{R}223 - \text{R}13 \quad \checkmark\text{M}$ $= \text{R}210 \quad \checkmark\text{A}$	AO 1M subtracting correct values 1A simplification <div style="border: 1px solid black; padding: 2px; width: fit-content;">Accept: -R210 full marks</div>	F L1 (2)
2.3.1	Exchange rate $\text{R}1 = 0,797782 \text{ Botswana pula} \quad \checkmark\checkmark\text{RT}$ <p style="text-align: center;">OR</p> $1\text{BWP} = \text{R}1,253475 \quad \checkmark\checkmark\text{RT}$	2RT correct exchange rate	F L1 (2)
2.3.2	Rupee $\checkmark\text{A}$ Dinar $\checkmark\text{A}$ Yen $\checkmark\text{A}$	1A rupee 1A dinar 1A yen <div style="border: 1px solid black; padding: 2px; width: fit-content;">Accept: Currency values or name of country - max 2 marks</div>	L1 F (3)
2.3.3 a	$\text{Cost price} = \text{ZAR } 13 \times 0,797782 \quad \checkmark\text{M}$ $= \text{BWP } 10,37 \quad \checkmark\text{A}$ <p style="text-align: center;">OR</p> $\text{Cost price} = 13 \text{ ZAR} \div 1,253475 \quad \checkmark\text{M}$ $= \text{BWP } 10,37 \quad \checkmark\text{A}$	AO <div style="border: 1px solid black; padding: 2px; width: fit-content;">CA from Q2.3.1 if ratio listed</div> 1M multiplying correct values 1A Simplification <p style="text-align: center;">OR</p> 1M dividing correct values 1A Simplification <div style="border: 1px solid black; padding: 2px; width: fit-content;">No penalty for unit</div>	F L2 (2)
2.3.3 b	$\text{Profit} = (\text{SP} - \text{CP}) \times \text{number sold}$ $7\,526 = (48 - 10,37) \times \text{number sold} \quad \checkmark\text{SF}$ $\text{Number sold} \times 37,63 = 7\,526 \quad \checkmark\text{CA}$ $\text{Number sold} = \frac{7\,526}{37,63} \quad \checkmark\text{MCA}$ $= 200 \quad \checkmark\text{CA}$	<div style="border: 1px solid black; padding: 2px; width: fit-content;">CA from Q2.3.3a</div> 1SF substitution 1CA simplification 1MCA dividing 1CA simplification	F L3 (4)

Ques	Solution	Explanation	T/L
2.3.4	Number of shares $3+2=5$ ✓A Errol's share of the profit $= \frac{2}{5} \times \text{BWP } 7\,526$ ✓M $= \text{BWP } 3\,010,40$ ✓CA	AO 1A for calculating 5 1M multiplying correct values 1CA Errol's profit share <div style="border: 1px solid black; padding: 2px; display: inline-block;">No penalty for units</div> (3)	F L2
2.3.5	Algerian dinar = $\frac{1}{9,546785}$ ✓A $= 0,104747$ ✓A	1A numerator 1A denominator (2)	F L2
		[38]	

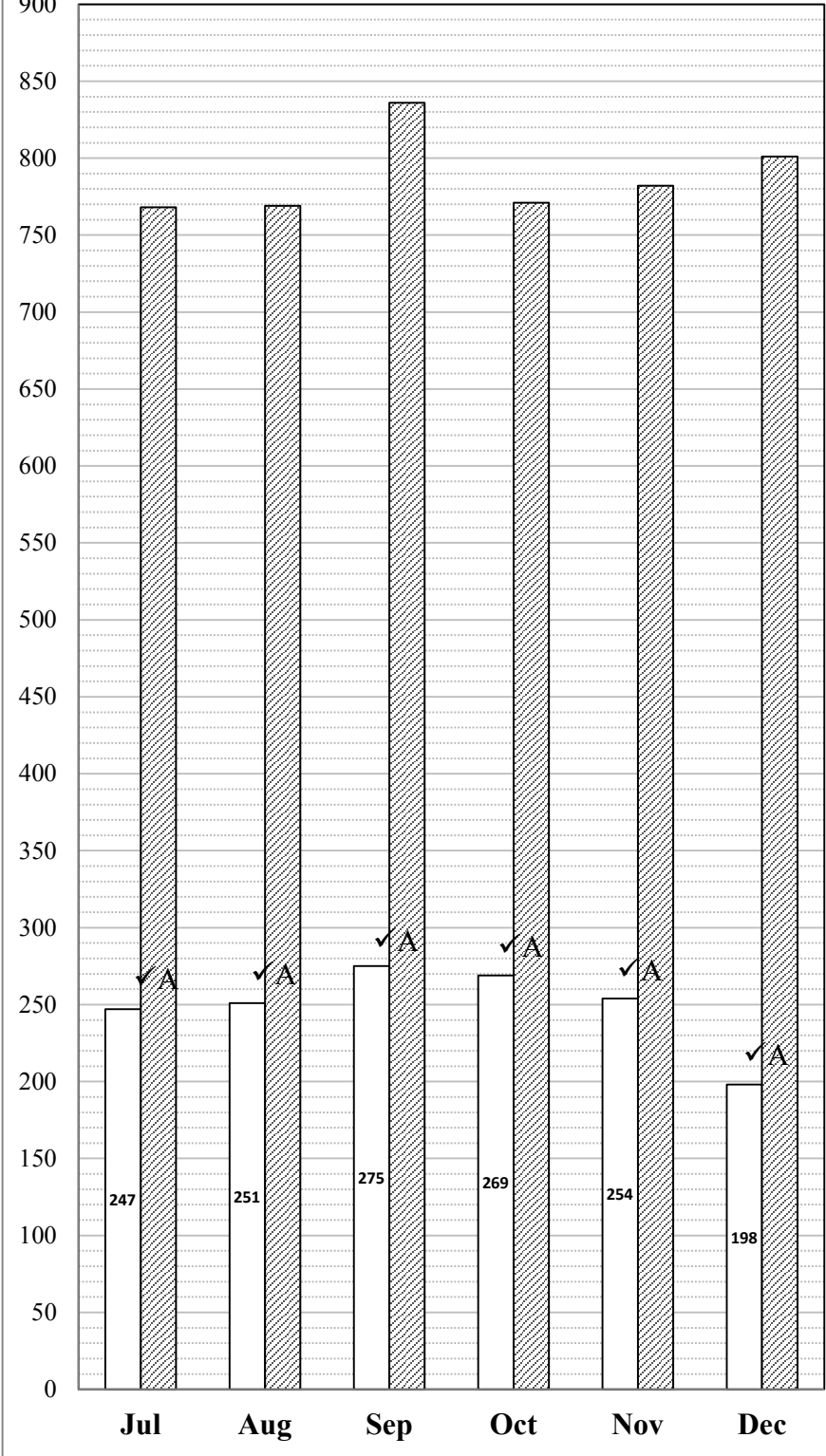
Ques	Solution	Explanation	T/L
3.2.1	<p>Length of ribbon $= \pi \times \text{diameter} + \text{overlap}$ $\checkmark C$ $= 3,142 \times 11\text{cm} + 2\text{cm} \checkmark SF$ $= 36,562 \text{ cm} \checkmark \checkmark CA$</p> <p style="text-align: center;">OR</p> <p>Length of ribbon $= \pi \times \text{diameter} + \text{overlap}$ $= 3,142 \times 110 \text{ mm} + 20 \text{ mm} \checkmark SF$ $= 365,62 \text{ mm} \checkmark \checkmark CA$ $= 36,562 \text{ cm} \checkmark C$</p>	<p>1C converting diameter to 11 cm 1SF substituting in formula 2CA simplification</p> <p style="text-align: center;">OR</p> <p>1SF substituting in formula 2CA simplification in mm 1C converting to cm</p> <div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 10px auto;"> Accept 37 cm full marks </div> <p style="text-align: right;">(4)</p>	M L2
3.2.2 a	<p>Inner diameter = $110 - 5 - 5$ } Inner radius = $100 \text{ mm} \div 2$ } $\checkmark MA$ $= 50 \text{ mm} \checkmark CA$</p> <p style="text-align: center;">OR</p> <p>Inner radius = $55\text{mm} - 5 \text{ mm} \checkmark MA$ $= 50 \text{ mm} \checkmark CA$</p>	<p>AO 1MA subtracting 5 twice and dividing by 2 1CA simplification</p> <p style="text-align: center;">OR</p> <p>1MA subtracting 5 from the radius 1CA simplification</p> <p style="text-align: right;">(2)</p>	M L1
3.2.2 b	<p>Volume of cylinder $= \pi \times \text{radius}^2 \times \text{height}$ $\checkmark SF$ $= 3,142 \times (50\text{mm})^2 \times 48\text{mm} \checkmark A$ $\checkmark CA$ $= 377\,040\text{mm}^3 \checkmark A$</p>	<div style="border: 1px solid black; padding: 2px; width: fit-content; margin-bottom: 10px;"> CA from Q3.2.2 a </div> <p>1A for calculating 48 1SF substituting radius from Q3.2.2a 1CA simplification 1A for correct unit</p> <p style="text-align: right;">(4)</p>	M L2
		[21]	

QUESTION 4 [25MARKS]			
Ques	Solution	Explanation	T/L
4.1.1	7 ✓✓RP	2RP correct store number Accept Shop number 9 full marks (2)	MP L1
4.1.2	Parking 2 ✓✓RP	2RP correct parking number Accept 2 full marks (2)	MP L1
4.1.3	Woolworths ✓✓RP	2RP correct shop name Accept: Woolworths with additional shop maximum 1 mark (2)	MP L1
4.1.4	Turn right as you exit the Crazy Daisy Shop ✓A Turn right towards Entrance 1 Turn left towards Entrance 2 ✓A Pass two shops then turn right ✓A Shop number 18 will be on your right ✓A OR Turn right as you exit the Crazy Daisy Shop ✓A Turn right towards Entrance 1 Continue straight towards Entrance 1 ✓A Turn left passing Checkers heading towards Entrance 4 ✓A Then turn left towards shop 18 ✓A	1A turn right 1A turn left 1A turn right 1A on your right OR 1A turn right 1A continue straight 1A turn left 1A turn left Accept: Using shops as landmarks (4)	MP L2

Ques	Solution	Explanation	T/L
4.1.5	27 doors ✓✓A	2A correct number of doors (2)	MP L2
4.1.6	$P_{(2 \text{ entrances})} = \frac{2}{23} / 0,087/8,7\%$ ✓A ✓A	1A numerator 1A denominator Accept: $\left. \begin{array}{l} \frac{3}{23} \\ \frac{3}{21} \end{array} \right\} \text{ Full Marks}$ $\left. \begin{array}{l} \frac{3}{21} \end{array} \right\} \text{ Max 1 mark}$ (2)	P L2
4.1.7	$P_{(\text{not an even number})} = \frac{12}{23} \checkmark A$ ✓CA	1A numerator 1CA denominator from Q4.1.6 Accept as CA from Q4.1.6 $\left. \begin{array}{l} \frac{11}{21} \end{array} \right\} \text{ Full Marks}$ (2)	P L2

Ques	Solution	Explanation	T/L
4.2.1	Top view of the coffee shop. ✓✓A OR Top view of the shop without the roof. ✓✓A	2A explanation <div style="border: 1px solid black; padding: 5px;">Accept: Aerial view without the roof Layout of a home from above</div> (2)	MP L1
4.2.2	Bathroom OR Wash room OR Rest room ✓✓RP	2RP reading from plan <div style="border: 1px solid black; padding: 5px;">Accept: Toilet, Cloak room, Ablution, Loo, Ladies, Gents</div> (2)	MP L1
4.2.3	South-East / SE ✓✓RP	2RP reading from plan (2)	MP L1
4.2.4	70 mm : 15 m 70 : 15 000 ✓C 1 : 214,2857143 ✓S 1 : 214 ✓CA	1C convert to mm 1S simplification 1CA answer <div style="border: 1px solid black; padding: 5px;">Accept 1 : 215</div> (3)	MP L3
		[25]	

QUESTION 5 [35 MARKS]			
Ques	Solution	Explanation	T/L
5.1.1	September ✓✓RT	2RT read from table Accept: Sep/Sept/ 9 th month full marks September and another month maximum 1 mark (2)	D L1
5.1.2	Mean income $= \frac{(238+266+254+238+233+216+247+251+275+269+254+198)\text{million}}{12}$ $= \frac{2\,939\text{ million}}{12} \quad \checkmark\text{M}$ $= \text{R}244,9166667 \text{ million} / \text{R}244\,916\,666,7 \quad \checkmark\text{CA}$	1RT correct values 1M concept of mean 1CA answer in millions Omitted millions Max 2 marks (3)	D L2
5.1.3	$\frac{743}{12\,343} \times \frac{100}{1} \% \quad \checkmark\text{M}$ $= 6,02\% \quad \checkmark\text{CA}$	1RT correct values 1M multiply by 100 1CA simplify (3)	D L1
5.1.4	45 905 000 ✓✓RT OR 45 905 thousand ✓✓RT	2RT correct value from table 45 905 only max 1 mark (2)	D L1
5.1.5	Sixty five million one hundred and sixty eight thousand ✓A	1RT reading from table as is 1A correct wording with millions (2)	D L1
5.1.6	Median = $\frac{1015+1020}{2} \quad \checkmark\text{M}$ $= 1\,017,5 \text{ million} \quad \checkmark\text{CA}$	AO 1MA identifying correct middle values 1M concept of median 1CA simplification Penalty 1 for omitting millions (3)	D L2
5.1.7	$P_{(\text{less than } 200\,000\,000)} = \frac{1}{12} \quad \checkmark\text{A}$ $= 0,08333333 \quad \checkmark\text{CA}$	AO 1A numerator 1A denominator 1CA decimal form NPR (3)	P L2

Ques	Solution	Explanation	T/L																					
5.1.8	<p style="text-align: center;">COMPARISON BETWEEN INCOME FOR RAIL AND ROAD TRANSPORTATION</p>  <table border="1" style="margin-left: auto; margin-right: auto;"> <caption>Data from Bar Chart</caption> <thead> <tr> <th>Month</th> <th>Rail Income</th> <th>Road Income</th> </tr> </thead> <tbody> <tr> <td>Jul</td> <td>247</td> <td>~770</td> </tr> <tr> <td>Aug</td> <td>251</td> <td>~770</td> </tr> <tr> <td>Sep</td> <td>275</td> <td>~840</td> </tr> <tr> <td>Oct</td> <td>269</td> <td>~775</td> </tr> <tr> <td>Nov</td> <td>254</td> <td>~785</td> </tr> <tr> <td>Dec</td> <td>198</td> <td>~805</td> </tr> </tbody> </table> <p style="text-align: right;"> <input type="checkbox"/> Rail Income <input checked="" type="checkbox"/> Road Income </p>	Month	Rail Income	Road Income	Jul	247	~770	Aug	251	~770	Sep	275	~840	Oct	269	~775	Nov	254	~785	Dec	198	~805		D L2
Month	Rail Income	Road Income																						
Jul	247	~770																						
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Nov	254	~785																						
Dec	198	~805																						
<p>1A for each correctly plotted bar × 6 If graph is drawn on top of other graph (full marks) Perfect line graph (3/6)</p>			(6)																					

Ques	Solution	Explanation	T/L
5.2.1	Total number of households for Grants: $\begin{aligned} & \checkmark M \qquad \qquad \qquad \checkmark MA \\ & = [2768 - (1404 + 216 + 123 + 180 + 7 + 117 + 7)] \text{ thousand} \\ & = 714\,000 \text{ households } \checkmark CA \end{aligned}$ <p style="text-align: center;">OR</p> $\begin{aligned} & \checkmark M \qquad \qquad \qquad \checkmark MA \\ & (2768 - 1404 - 216 - 123 - 180 - 7 - 117 - 7) \text{ thousand} \\ & = 714\,000 \text{ households } \checkmark CA \end{aligned}$	1M subtracting from 2 768 1MA adding values 1CA simplification <p style="text-align: center;">OR</p> 1M subtracting from 2 768 1MA continuous subtraction 1CA simplification (3)	D L1
5.2.2	Business $\checkmark\checkmark$ RG	2RG correct source (2)	D L1
5.2.3	Difference $\begin{aligned} & \checkmark RT \\ & = 216\,000 - 28\,000 \checkmark M \\ & = 188\,000 \checkmark A \end{aligned}$	AO 1RT correct values 1M subtracting 1A simplification <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> Penalty 1 for omitting thousands </div> (3)	D L1
5.2.4	Remittance $\begin{aligned} & \checkmark RT \\ & = \frac{64\,000}{532\,000} \times \frac{100}{1} \% \checkmark M \\ & = 12,03\% \checkmark CA \end{aligned}$	1RT correct values 1M percentage 1CA simplification <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> $\frac{64}{532\,000} \times \frac{100}{1} \% = 0,012$ maximum 2 marks </div> (3)	D L2
[35]			
TOTAL: 150 MARKS			