



**NATIONAL
SENIOR CERTIFICATE**

GRADE 11

NOVEMBER 2014

**MATHEMATICAL LITERACY P2
MEMORANDUM**

MARKS: 100

Symbol	Explanation
M	Method
MA	Method with accuracy
CA	Consistent accuracy
A	Accuracy/Answer
C	Conversion
S	Simplification
RT/RG/RM	Reading from a table/Reading from a graph/Read from map
F	Choosing the correct formula
SF	Substitution in a formula
J / O	Justification
P	Penalty, e.g. for no units, incorrect rounding off etc.
R	Rounding Off/Reason

This memorandum consists of 7 pages.

QUESTION 1			
QUESTION	SOLUTION		
1.1	1.1.1	<p>2 litres = 2 000 ml ✓</p> <p>No of cups = $\frac{2\,000\text{ ml}}{125\text{ ml}} \checkmark$ = 16 cups ✓</p> <p>OR</p> <p>125 ml = 0,125 l ✓</p> <p>No of cups = $\frac{2\text{ l}}{0,125\text{ l}} \checkmark$ = 16 cups ✓</p>	<p>1C Conversion to ml OR /</p> <p>1M divided by 125 OR 0,125 1CA</p> <p>(3)</p>
	1.1.2	<p>2 litres = 2 000 ml</p> <p>No of cups = $\frac{2\,000\text{ ml}}{250\text{ ml}} \checkmark$ = 8 cups ✓</p> <p>OR</p> <p>250 ml = 0,250 l ✓</p> <p>No of cups = $\frac{2\text{ l}}{0,250\text{ l}} \checkmark$ = 8 cups ✓</p>	<p>1C Conversion to ml OR /</p> <p>1M divided by 250 OR 0,250 1CA</p> <p>(3)</p>
	1.1.3	<p>Grade 12A Profit = Income – Expenses = (16 x 2,00) ✓ – 8,99 = 32 – 8,99 ✓ = R23,01 ✓</p> <p>Grade 12B Profit = Income – Expenses = (8 x 3,50) ✓ – 8,99 ✓ = 28 – 8,99 = R19,01 ✓</p> <p>Disagree, ✓ Grade 12A makes R4,00 more profit (R23,01 – R19,01). ✓</p>	<p>1CA multiplying 16 x 2 according to answer in 1.1.1 1CA difference between income and expenses 1CA</p> <p>1CA multiplying 8 x 3,50 According to answer in 1.1.2 1CA difference between income and expenses 1CA</p> <p>2CA Opinion</p> <p>(8)</p>
	1.1.4	<p>Percentage profit = $\frac{23,01}{8,99} \times \frac{100}{1} \checkmark$ = 255,95% ✓ ≈ 260% ✓</p>	<p>1M concept of % 1A 1CA rounding to nearest 10 (depending on answer)</p> <p>(3)</p>

1.2	1.2.1	Day 3 ✓✓	2RG	(2)
	1.2.2	Difference = $88 \checkmark - 20 \checkmark$ = 68 cups of cold drink ✓	2RG correct values 1A	(3)
	1.2.3	Day 4 ✓✓	2RG	(2)
	1.2.4	60 cups of cold drinks ✓✓	2RG	(2)
	1.2.5	Grade 12A Average = $\frac{32+60+60+40+72+100+64+80+56+96}{10} \checkmark$ = $\frac{660}{10}$ = 66 cups ✓ Grade 12B Average = $\frac{20+40+60+56+44+88+52+60+44+76}{10} \checkmark$ = $\frac{540}{10}$ = 54 cups ✓ Agree with statement. ✓ Grade 12A's average is greater than Grade 12B's average. ✓	1M adding correct values 1M divided by 10 1CA 1M adding correct values 1M divided by 10 1CA 2J	(8)
	1.2.6	32 : 20 ✓ 8 : 5 ✓	1M writing as ratio 1A simplest form	(2)
				[36]

QUESTION 2				
2.1	2.1.1	Number of tins across length = <u>48 cm</u> ✓ 8,4 cm ✓ = 5,714... ✓ ≈ 5 tins ✓	1M using the correct length 1A find diameter 1A 1R rounding down	(4)
	2.1.2	Number of tins across width = <u>35 cm</u> ✓ 8,4 cm = 4,166... ✓ ≈ 4 tins ✓	1M using the correct width 1A 1R rounding down	(3)
	2.1.3	Number of tins stacked on top of each other = <u>15 cm</u> ✓ 3,8 cm = 3,947... ✓ ≈ 3 tins ✓	1M using the correct values 1A 1R rounding down	(3)
	2.1.4	Number of tins that can go into the box = $5 \times 4 \times 3$ ✓ = 60 tins ✓ Vuyo is correct, he will be able to pack more than 50 tins into the box. ✓	1M 1CA using values as in 2.1.1 – 2.1.3 1CA justification	(3)
2.2	<p>Cost of the trip = $7,6 \times \text{R}13,20$ ✓ = $\text{R}100,32$ ✓</p> <p>Post Office Services</p> <p>1 tin tuna = 170 g 60 tins tuna = $60 \times 170 \text{ g}$ = <u>$10\,200 \text{ g}$</u> ✓ 1 000 = 10,2 kg ✓</p> <p>Rate = $35,10 + (4,70 \times 10 \text{ kg})$ ✓ = $35,10 + 47,00$ = $\text{R}82,10$ ✓</p> <p>He must make use of the Post Office Services because he will pay $\text{R}18,22$ ($\text{R}100,32 - \text{R}82,10$) less. ✓✓</p>		1M 1A 1CA finding the mass of 60 tins (depending on answer in 2.1.4) 1A convert g to kg 1CA substitution in formula 1CA 2CA choose most economical option	(8)
				[21]

QUESTION 3				
3.1	3.1.1	South ✓✓	2A	(2)
	3.1.2	One-way streets ✓✓	2A	(2)
	3.1.3	Girton/Park/Jorrisen/Juta/Breë/Smit/ Prospect/Olivia/Park (Any 1) ✓✓	2A	(2)
	3.1.4	B1 OR 1B ✓✓	2A	(2)
	3.1.5	Up Harrison Street → right into Breë Street → left into King George (Accept any logical directions.) ✓✓✓	3A	(3)
	3.1.6	Scale 2,5 cm ✓ = 500 m 2,5 cm = 500 x 100 2,5 cm = 50 000 cm ✓ 1 cm = 20 000 cm 1 : 20 000 ✓ OR 2,5 cm = 500 m ✓ 1 cm = 200 m 1 cm = 200 x 100 cm 1 cm = 20 000 cm ✓ 1 : 20 000 ✓	1A measuring scale on map 1A converting 500 m to cm 1A scale	(3)

	3.1.7	<p>Marcia Scale = 1 : 20 000 Distance = 4,2 cm ✓ (ACCEPT 4,1 – 4,3) Distance in meters = $\frac{4,2 \times 20\,000}{100}$ = 840 m ✓ OR Distance in meters = 4,2 ✓ x 200 (ACCEPT 4,1 – 4,3) = 840 m ✓</p> <p>Zoe Scale = 1 : 20 000 Distance = 3,3 cm ✓ Distance in meters = $\frac{3,3 \times 20\,000}{100}$ (ACCEPT 3,2 – 3,4) = 660 m ✓ OR Distance in meters = 3,3 ✓ x 200 (ACCEPT 3,2 – 3,4) = 660 m ✓</p> <p>Zoe's ✓ distance is 180 m (840 m – 660 m) shorter than that of Marcia. ✓</p>	<p>1A Measuring distance 1CA convert to meters</p> <p>1A Measuring distance 1CA convert to meters</p> <p>1CA Identify shortest distance 1CA difference in distance</p> <p>(CA mark applies for scale calculated in 3.1.6)</p>	(6)
3.2	3.2.1	<p>Number of cards in each suite = $\frac{52}{4}$ ✓ = 13 ✓</p>	<p>1M 1A</p>	(2)
	3.2.2	<p>Probability (black and 10) = $\frac{2}{26}$ ✓ + $\frac{2}{26}$ ✓ = $\frac{4}{26}$ = $\frac{2}{13}$ OR 0,154</p> <p>OR 15,4% ✓</p>	<p>1A identifying both 1M adding</p> <p>1A</p>	(3)
				[25]

QUESTION 4			
4.1	4.1.1	Price before discount = R3 999,90 + R900 ✓ = R4 899,90 ✓	1M adding correct values 1A (2)
	4.1.2	% discount = $\frac{900}{4\,899,90} \times \frac{100}{1}$ ✓ = 18,36772179 ✓ = 18,4 % ✓	1M concept of % 1A 1R rounding to 1dec. place (3)
	4.1.3	The interest rate is not equal to 8,5 %, but starts at 8,5%. ✓ The repayment value is not equal to R6 202,39, but starts at R6 202,39. ✓ (Accept any other relevant explanation.)	1A: explanation 'from 8,5%' 1A: explanation 'from R6 202,39' (2)
	4.1.4	$A = P(1 + ni)$ = 3 999,90 (1 + 0,085 x 2) ✓ = 3 990,90 (1,17) ✓ = R4 679,88 ✓ Final answer is not the same. The interest rate for this purchase is not 8,5%. ✓✓	1 SF substitute correct values 1 S simplify bracket 1CA 2A opinion (5)
	4.1.5	<ul style="list-style-type: none"> You pay much more due to interest calculated. ✓✓ <p style="text-align: center;">OR</p> <ul style="list-style-type: none"> Item only belongs to you when final payment is made. ✓✓ (Accept any relevant answer.)	2A (2)
4.2	4.2.1	Accept any suitable heading. ✓✓	2A (2)
	4.2.2	Music, ✓ videos ✓ and photos (Accept any other usage not mentioned in the pie chart.)	2A 1 mark per usage (2)
			[18]
TOTAL:			100