



basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 11

MATHEMATICAL LITERACY P1

EXEMPLAR 2013

MEMORANDUM

MARKS: 100

SYMBOL	EXPLANATION
M	Method
MA	Method with accuracy
CA	Consistent accuracy
A	Accuracy
C	Conversion
S	Simplification
RT /RG	Reading from a table/Reading from a graph
F	Choosing the correct formula
SF	Substitution in a formula
O	Opinion
P	Penalty, e.g. for no units, incorrect rounding off etc.
R	Rounding off/Reason

This memorandum consists of 7 pages.

QUESTION 1 [19 marks]			
Ques	Solution	Explanation	Topic
1.1.1	$2,35 \ell = 2,35 \times 1\,000 \text{ m}\ell$ $= 2\,350 \text{ m}\ell \checkmark \text{A}$	1A answer (1)	M L1
1.1.2	$\text{Cost per kg} = \frac{\text{R}19,99}{3\text{kg}} \checkmark \text{M}$ $= \text{R}6,66 \checkmark \text{A}$	1M dividing by 3 kg 1A answer (2)	F L1
1.2.1	$\text{Percentage mark-up} = \frac{\overset{\checkmark \text{SF}}{\text{R}53,75 - \text{R}43,00}}{\text{R}43,00} \times 100\%$ $= \frac{\text{R}10,75}{\text{R}43} \times 100\% \checkmark \text{S}$ $= 25\% \checkmark \text{CA}$	1SF substitution 1S simplification 1CA answer (3)	F L2
1.2.2	$\text{Number of kilograms} = \frac{\text{R}2\,000}{\text{R}54} \checkmark \text{M}$ $= 37,04 \checkmark \text{A}$	1M dividing 1A answer (2)	F L1
1.2.3	$\text{A} = \text{R}76,00 + 30\% \text{ of } \text{R}76,00 \checkmark \text{M}$ $= \text{R}76,00 + \text{R}22,80 \checkmark \text{A}$ $= \text{R}98,80 \checkmark \text{CA}$ <p style="text-align: center;">OR</p> $\overset{\checkmark \text{A}}{\text{A}} = 1,3 \times \text{R}76,00 \checkmark \text{M}$ $= \text{R}98,80 \checkmark \text{CA}$	1M adding 30% 1A mark up 1CA answer (3)	F L2
1.2.4	$\text{Cost} = 1,2 \text{ kg} \times \overset{\checkmark \text{M}}{\text{R}53,75} + 0,5 \text{ kg} \times \overset{\checkmark \text{M}}{\text{R}85,00}$ $= \text{R}64,50 + \text{R}42,50 \checkmark \text{S}$ $= \text{R}107,00 \checkmark \text{CA}$	2M using correct selling prices 1S simplification 1CA answer (4)	F L1(2) L2(2)

Ques	Solution	Explanation	Topic
1.2.5	$\begin{aligned} \text{Cost price} &= 50 \times \overset{\check{M}}{R43,00} \\ &= R2\ 150 \check{S} \end{aligned}$ $\begin{aligned} \text{Selling price} &= 50 \times R53,75 \\ &= R2\ 687,50 \check{S} \end{aligned}$ $\begin{aligned} \text{Profit} &= R2\ 687,50 - R2\ 150 \\ &= R537,50 \check{CA} \end{aligned}$ <p>OR</p> $\begin{aligned} \text{Profit per kilogram} &= R53,75 - R43,00 \check{M} \\ &= R10,75 \check{S} \end{aligned}$ $\begin{aligned} \text{Profit on 50 kg} &= 50 \times R10,75 \check{M} \\ &= R537,50 \check{CA} \end{aligned}$	<p>1M/A multiplying 1S simplifying</p> <p>1S selling price</p> <p>1CA answer</p> <p>1M/A multiplying 1S simplifying</p> <p>1M/A multiplying 1CA answer</p> <p>(4)</p>	<p>F L1(2) L2(1) L3(2)</p>
			[19]

QUESTION 2 [15 marks]			
Ques	Solution	Explanation	Topic
2.1	$\begin{aligned} \text{Deposit} &= 10\% \text{ of R6 599,99} \\ &= \frac{10}{100} \times \text{R6 599,99} \quad \checkmark\text{M} \\ &= \text{R659,999} \\ &\approx \text{R660} \quad \checkmark\text{CA} \end{aligned}$	1M finding 10% 1CA answer (2)	F L1(2)
2.2	$\begin{aligned} \text{Amount to be financed (P)} &= \text{R6 599,99} - \text{R660,00} \\ &= \text{R5 939,99} \quad \checkmark\text{A} \\ &\quad \checkmark\text{A} \quad \checkmark\text{A} \\ \text{Interest} &= \text{R5 939,99} \times 0,115 \times 2 \\ &= \text{R1 366,20 for two years} \\ \text{Total due} &= \text{R5 939,99} + \text{R1 366,20} \quad \checkmark\text{CA} \\ &= \text{R7 306,19} \end{aligned}$	1A subtracting deposit 1A value of i . 1A two years 1CA adding i to outstanding amount (4)	F L1(2) L2(2)
2.3	$\begin{aligned} \text{Amount} &= \frac{\text{R7 306,19}}{24} \quad \checkmark\text{M} \\ &= \text{R304,4245...} \quad \checkmark\text{A} \\ &\approx \text{R304,42} \quad \checkmark\text{A} \end{aligned}$	1M dividing by 24 1A answer (2)	F L2
2.4	$\text{Height} = 12 \times 2,54 \text{ cm} = 30,48 \text{ cm}$	1M multiplying by 2,54 1A height (2)	M L1
2.5.1	$\begin{aligned} \text{Amount} &= 12 \times \text{R300} \quad \checkmark\text{M} \\ &= \text{R3 600} \quad \checkmark\text{A} \end{aligned}$	1M multiplying by 12 1A answer (2)	F L1
2.5.2	$\begin{aligned} \text{Amount} &= \text{R300} - (\text{R120} + \text{R150}) \quad \checkmark\text{M} \quad \checkmark\text{M} \\ &= \text{R30} \quad \checkmark\text{A} \end{aligned}$	1M subtracting from R300 1M adding costs 1A answer (3)	F L1(2) L2(1)
			[15]

QUESTION 3 [20 marks]			
Ques	Solution	Explanation	Topic
3.1.1	Height of tin = 430 mm = 43 cm	1A length 1C conversion (2)	M L1
3.1.2	Distance = 4 570 mm – 1 780 mm ✓M = 2 790 mm ✓A	1M subtracting correct values 1A correct answer (2)	M L1
3.1.3	Length = 4 260 – 2 610 = 1 650 mm ✓A Area = 1 600 × 1 650 ✓SF = 2 640 000 mm ² ✓CA	1 A value of length 1SF substitution 1CA answer (3)	M L1(1) L2(2)
3.1.4	✓SF A = 4,830 m (2 × 9,75mm + 6,4 m) – 6,4 m × 0,43 m ✓SF = 4,83 m (25,9 m) – 2,752 m ² ✓S = 122,345 m ² ✓CA	1C conversion 1SF value of k 1SF value of b 1SF value of t and p. 1S simplification 1CA area (6)	M L1(2) L2(2) L3(2)
3.2.1	Amount of paint = $\frac{122,345}{8} \ell$ ✓M = 15,293.. ℓ ✓CA ≈ 16 ℓ ✓R	1M dividing by 8 1CA amount of paint 1R rounding up (3)	M L1(2) L2(1)
3.2.2	Number of 5 ℓ = $\frac{16 \ell}{5 \ell}$ ✓M = 3,2 = 4 ✓CA Cost = 4 × R215,85 ✓M = R863,40 ✓CA	1M dividing by 5 ℓ 1 CA number of containers 1M multiplying by cost 1CA cost of paint (4)	M/F L1(2) L2(2)
			[20]

QUESTION 4 [14 marks]			
Ques	Solution	Explanation	Topic
4.1.1	R63 ✓✓A	2A correct regional road (2)	M L1
4.1.2	✓A Pearston; ✓A Somerset East; ✓A Cookhouse; Bedford	3A any three correct (3)	M L1
4.1.3	25 km + 49 km + 10 km ✓A = 84 km ✓CA ✓M	1A correct reading from map 1M adding 1CA total distance (3)	M L1
4.1.4	North-easterly OR NE ✓✓A	2A correct direction (2)	M/P L1
4.2	✓A 3 cm : 15 km ✓M = 3 cm : 1 500 000 cm ✓C = 1 : 500 000 ✓CA	1A correct measurement 1M writing as a ratio 1C converting to cm 1CA simplified ratio (4)	S/M/P L2
			[14]

QUESTION 5 [32 marks]																		
Ques	Solution	Explanation	Topic															
5.1.1	$\text{Total} = 20 + 5 + 5 + 30 + 40 + 15 + 5 + 10 \checkmark^M$ $= 130 \checkmark^A$	1M adding 1A sum (2)	D L1															
5.1.2	Percentage preferring casual wear $= \frac{40 \checkmark^A}{130} \times 100\% \checkmark^M$ $= 30,77\% \checkmark^{CA}$	1A correct values 1M calculating % 1CA solution (3)	D L1															
5.1.3	Fancy dress $\checkmark\checkmark^A$	2A correct answer (2)	D L2															
5.1.4	<p style="text-align: center;">DRESS CODE FOR THE DANCE</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <caption>Data for Dress Code Bar Chart</caption> <thead> <tr> <th>Dress Code</th> <th>Blue Bar (Learners)</th> <th>Maroon Bar (Learners)</th> </tr> </thead> <tbody> <tr> <td>FORMAL</td> <td>20</td> <td>40</td> </tr> <tr> <td>TRADITIONAL DRESS</td> <td>5</td> <td>15</td> </tr> <tr> <td>FANCY DRESS</td> <td>5</td> <td>5</td> </tr> <tr> <td>CASUAL WEAR</td> <td>30</td> <td>10</td> </tr> </tbody> </table> <p style="text-align: center;">Dress Code</p>	Dress Code	Blue Bar (Learners)	Maroon Bar (Learners)	FORMAL	20	40	TRADITIONAL DRESS	5	15	FANCY DRESS	5	5	CASUAL WEAR	30	10	7A each bar (7)	D L1
Dress Code	Blue Bar (Learners)	Maroon Bar (Learners)																
FORMAL	20	40																
TRADITIONAL DRESS	5	15																
FANCY DRESS	5	5																
CASUAL WEAR	30	10																
5.1.5 (a)	$P = \frac{60 \checkmark^A}{130 \checkmark^A}$	1A numerator 1A denominator (2)	P L2															
5.1.5 (b)	$P = \frac{130 - 10 \checkmark^A}{130}$ $= \frac{120 \checkmark^A}{130}$	1A numerator 1A solution (2)	P L3															

Ques	Solution	Explanation	Topic
5.2.1	39 49 56 58 59 ^{✓A} 67 75 75 75 79 89 98 99	1A solution (2)	D L1
5.2.2	75 ✓A✓A	2A solution (2)	D L1
5.2.3	Mean = $\frac{976}{14}$ ^{✓M} = 69,7... ^{✓A} ≈ 70	1M adding 1A dividing by 14 1A simplification (3)	D L1 L2
5.2.4	Median = $\frac{66 + 68}{2}$ ✓M = 67 ✓A	1M concept 1A solution (2)	D L2
5.2.5	Range = 99 – 39 ✓M = 60 ✓A	1M subtracting correct values 1A solution (2)	D L1
5.2.6	P = $\frac{3}{13}$ ✓A ✓A	1A numerator 1A denominator (2)	P L2
5.2.7	P = $\frac{5}{14}$ ✓A ✓A	1A numerator 1A denominator (2)	P L2
			[32]

TOTAL: 100