



# education

---

Department:  
Education  
**REPUBLIC OF SOUTH AFRICA**

**NATIONAL  
SENIOR CERTIFICATE**

**GRADE 11**

**MATHEMATICAL LITERACY P1**

**NOVEMBER 2007**

**MARKING MEMORANDUM**

**This memorandum consists of 8 pages.**

**MARKING MEMORANDUM -PAPER 1-MATHEMATICAL LITERACY**

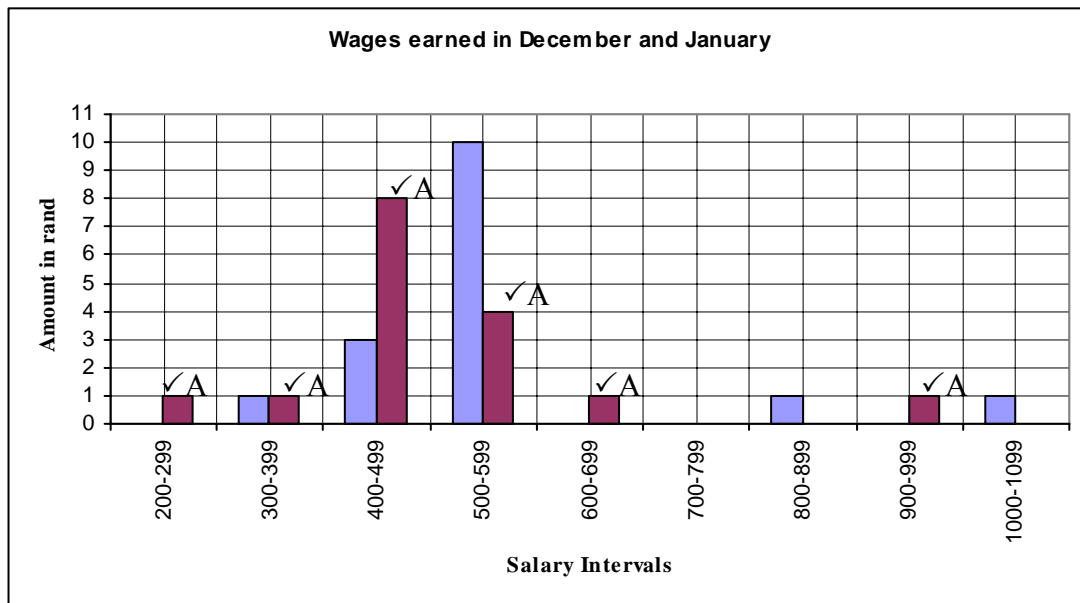
<b>QUESTION 1 [17]</b>		
1.1	12 000 ✓A	1 A solution (1)
1.2.1	Gauteng ✓A	1 A solution (1)
1.2.2	27,8% ✓A	1 A solution (1)
1.3	Northern Cape ✓A ✓A	2 A solution (2)
1.4	Total GWh = 22 380 + 8 260 + 4 730 + 9 140 + 43 170 + 24 420 + 59 730 + 31 390 + 11 520 ✓M  = 214 740 GWh ✓A	1 M adding  1 A solution (2)
1.5	Difference = 22 380 – 9 140 ✓M = 13 240 GWh ✓A	1 M substitution  1 A solution (2)
1.6.1	Amount of water = 2 x 50 ℓ ✓M = 100 ℓ ✓A	1 M adding 1 A solution (2)
1.6.2	Cost of 24 cm depth of water = $\frac{36}{12} \times 96$ cents ✓M  = 288 cents ✓A <b>OR</b> R2,88	1 M correct values multiplied 1 A solution (2)
1.6.3	Total cost = 7 x 48 cents ✓M  = 336 cents <b>OR</b> R3,36 ✓A	1 M correct values multiplied 1 A solution (2)
1.6.4	Cost of shower compare to bath = $\frac{48}{96}$ ✓M  = $\frac{1}{2}$ ✓A	1 M dividing  1 A solution (2)
		<b>[17]</b>

QUESTION 2 [30]																	
2.1.1	$A = 160 \times R120 \checkmark M$ <p style="text-align: center;"><b>OR</b></p> $\frac{A}{12\,000} = \frac{160}{100} \checkmark M$ $= R19\,200 \checkmark A$ $A = \frac{160}{100} \times 12\,000$ $= R19\,200 \checkmark A$	1 M adding 1 A solution (2)															
2.1.2 (a)	$C = R90 \times n + R3\,000$ $15\,600 = 90B + R3\,000 \checkmark M$ $90B = 15\,600 - 3\,000$ $= 12\,600 \checkmark A$ $B = \frac{12\,600}{90}$ $= 140 \checkmark CA$	1 M substitution 1A correct simplification 1 CA solution (3) <b>Answer only full marks</b>															
2.1.2 (b)	<p style="text-align: center;"><b>Income and Expenses</b></p> <table border="1" style="margin-top: 10px;"> <caption>Data points from the Income and Expenses graph</caption> <thead> <tr> <th>Number of Tickets Sold</th> <th>Income (Rand)</th> <th>Cost (Rand)</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>0</td> <td>3000</td> </tr> <tr> <td>50</td> <td>7500</td> <td>7500</td> </tr> <tr> <td>100</td> <td>15000</td> <td>12000</td> </tr> <tr> <td>200</td> <td>30000</td> <td>20000</td> </tr> </tbody> </table> <p style="text-align: center;">1M Plotting y-intercept   3A Plotting points   2A shape</p>		Number of Tickets Sold	Income (Rand)	Cost (Rand)	0	0	3000	50	7500	7500	100	15000	12000	200	30000	20000
Number of Tickets Sold	Income (Rand)	Cost (Rand)															
0	0	3000															
50	7500	7500															
100	15000	12000															
200	30000	20000															

2.1.3	100 tickets ✓A	1 A solution (1)
2.1.4	$24\ 000 : 21\ 000$ ✓M ✓A <b>OR</b> 8 : 7	1M selecting correct ratio 1 A solution (2)
2.2.1	$C = R150 \times 150$ ✓M <b>OR</b> $\frac{C}{7500} = \frac{150}{50}$ ✓M  $= R22\ 500$ ✓A $C = 3 \times 7\ 500$ $= R22\ 500$ ✓A	1 M substitution 1A solution (2)
2.2.2	See graph 3A Plotting points 2A shape	(5)
2.3.1	50 tickets ✓A	1A solution (1)
2.3.2	Profit = Income – Cost $= R30\ 000 - R21\ 000$ ✓M $= R9\ 000$ ✓A	1 M substitution 1A solution (2)
2.4.1 (a)	$P(\text{violin}) = \frac{3}{13}$ ✓A <b>OR</b> 0,2308 <b>OR</b> 23,08% ✓M	1 M substitution 1A solution (2)
2.4.1 (b)	$P(\text{keyboard}) = \frac{0}{13} = 0$ ✓M ✓A <b>OR</b> 0%	1 M substitution 1A solution (2)
2.4.1 (c)	$P(\text{female}) = \frac{13}{13} = 1$ ✓A <b>OR</b> 100%	1 M substitution 1A solution (2)
		<b>[30]</b>

<b>QUESTION 3 [24]</b>		
3.1	$\text{Median wage} = \frac{R475 + R485}{2} \quad \checkmark M \quad \checkmark A$ $= R480 \quad \checkmark CA$	1 M even median 1A correct value 1 CA soln. (3)
3.2	$\text{Range} = R925 - R296 \quad \checkmark M$ $= R629 \quad \checkmark A$	1 M subtraction 1A correct value (2)
3.3a	4 workers earned more than the mean $\checkmark A$	1A correct value (1)
3.3b	$\% \text{ percentage workers} = \frac{4}{16} \times 100\% \quad \checkmark M$ $= 25\% \quad \checkmark CA$	1M % 1CA soln. (2)
3.4	$\text{Mean} \quad \checkmark M \quad \checkmark A$ $= \frac{296+325+414+424+425+425+435+475+485+490+535+550+565+578+631+925}{16}$ $= \frac{7978}{16}$ $= R498,63 \quad \checkmark CA$	1 M add 1A correct value  1CA soln. (3)
3.5.1	None $\checkmark A$	1A correct value (1)
3.5.2	2 $\checkmark A$	1A correct value (1)

3.6



1 mark for each bar

(6)

3.7.1  $C = \pi D$

$= 3,14 \times 150\text{cm}$  ✓M  
 $= 471\text{ cm}$  ✓A

1M substitution

1A solution (2)

3.7.2 (a) No. of chairs =  $20 \times 8 = 160$  chairs ✓A

1A solution (1)

3.7.2 (b) No. of tables =  $\frac{106}{8}$  ✓M  
 $= 13,25$   
 $= 14$  tables ✓A

1M substitution

1A solution (2)

[24]

<b>QUESTION 4 [19]</b>		
4.1.1 (a)	Afternoon (15:33:42) ✓A	1 A solution (1)
4.1.1 (b)	3 ✓A	1 A solution (1)
4.1.1 (c)	14% ✓A	1 A solution (1)
4.1.1 (d)	8 items ✓A	1 A solution (1)
4.1.1 (e)	R4,80 ✓A	1 A solution (1)
4.1.2	$24 : 2^{\sqrt{M}} = 12 : 1$ ✓A	1M substitution 1A solution (2)
4.1.3	1 litre ice cream = $\frac{R26,99}{2}$ = R13,50 ✓A	1A solution (1)
4.1.4	$V = l \times b \times h$ $2\,000 = 25 \times 10 \times h$ ✓M <b>OR</b> $h = \frac{V}{l \times b}$ ✓M $h = \frac{2\,000}{250}$ ✓A $h = \frac{2\,000}{25 \times 10}$ ✓A $= 8\text{ cm}$ ✓CA $= 8\text{ cm}$ ✓CA	1M substitution 1A simplification 1CA solution (3)
4.2.1 (a)	60 inches = 60 x 0,0254 m ✓M = 1,524 m ✓A	1M substitution 1A solution (2)
4.2.1 (b)	$56\text{ kg} = \frac{56}{0,4536}\text{ pounds}$ ✓M $= 123,46\text{ pounds}$ ✓A	1M substitution 1A solution (2)
4.2.1 (c)	$BMI = \frac{56}{(1,65)^2}$ ✓M $= 20,6$ ✓A ✓A	1M substitution 2A solution (3)
		<b>[18]</b>

<b>QUESTION 5 [11]</b>		
5.1	$\sqrt{A}$ $A^2\sqrt{A}$	2 A solution (2)
5.2	Devenish Street $\checkmark A$	1 A solution (1)
5.3	Thabo Mbeki Street Grobler Street $\checkmark A$ $\checkmark A$ Burger Street $\checkmark A$ Plein Street $\checkmark A$	2A    (2)
5.4	Walk one block along Hospital Street to Burgher Street and five blocks south, passing Van Boeschoten Street, Rissik Street, Devenish Street, Jorissen Street and Grobler Street. Walk to the entrance.  <b>Any feasible direction that leads to the destination is acceptable)</b>	$\checkmark M \checkmark A$    1M 1A (2)
5.5	$90 \text{ mm} = 90 \times 22\,500 \text{ mm}$ $= 2\,025\,000 \text{ mm} \quad \checkmark M$ $= 2,025 \text{ km} \quad \checkmark A$	1M 1A (2)
5.6	$200\,000 = 200 \times 0,002\,590\,72 = R518,14 \quad \checkmark A$ $\checkmark M$	1M 1A (2)
		<b>[11]</b>

**TOTAL: 100 marks**



**ASSESSMENT FRAMEWORK**  
**Mathematical Literacy Grade 11**  
**November 2007 P1**

Q	Context detail	Item	Learning Outcomes				Taxonomy Level		Sub-tot	Total
			LO 1	LO 2	LO 3	LO 4	L1 60%	L2 40%		
1	ELECTRICITY	1.1		1		1	2		2	16
		1.2.1		1			1		1	
		1.2.2				1	1		1	
		1.3				1	1		1	
		1.4	1	1			2		2	
		1.5	2	1			1	2	3	
		1.6.1	1	1			2		2	
		1.6.2	1	1			2		2	
		1.6.3	1	1			1	1	2	
2	CHILD WELFARE FUND RAISER	2.1.1	1	1			2		2	34
		2.1.2 a	2	1			1	2	3	
		2.1.2 b		5			2	3	5	
		2.1.3		1				1	1	
		2.1.4 a		1			1		1	
		2.1.4 b		1			1		1	
		2.1.4 c	1				1		1	
		2.2.1		2				2	2	
		2.2.2 a	1	1			1	1	2	
		2.2.2 b		5			2	3	5	
		2.3.1		1				1	1	
		2.3.2 a		1			1		1	
		2.3.2 b		1			1		1	
		2.3.3 c	2				2		2	
		2.4.1				2		2	2	
		2.4.2				2		2	2	
2.4.3				2		2	2			
3	BETTY'S CATERERS	3.1.1				3	3		3	21
		3.1.2				2	2		2	
		3.1.3 a				3	3		3	
		3.1.3 b	2			1	1	2	3	
		3.1.4				6	2	4	6	
		3.2.1			2		2		2	
		3.2.2			2		2		2	
4	MRS DUNN AND THETWINS	4.1.1a	1				1		1	19
		4.1.1b	1				1		1	
		4.1.1c	1				1		1	
		4.1.1d	1				1		1	
		4.1.1e	1				1		1	
		4.1.2	2				2		2	
		4.1.3	2				2		2	
		4.1.4			3		1	2	3	
		4.2.1			2		1	1	2	
		4.2.2			2		1	1	2	
		4.2.3	3					3	3	
5	EXCHANGE STUDENT	5.1			2		2		2	10
		5.2			1		1		1	
		5.3			4		4		4	
		5.4			2			2	2	
		5.5	1				1		1	
			<b>28</b>	<b>28</b>	<b>20</b>	<b>24</b>	<b>63</b>	<b>37</b>	<b>100</b>	<b>100</b>