



Province of the
EASTERN CAPE
EDUCATION

**NATIONAL
SENIOR CERTIFICATE**

GRADE 12

SEPTEMBER 2011

**MATHEMATICAL LITERACY– PAPER 1
MEMORANDUM**

MARKS: 150

This memorandum consists of 8 pages.

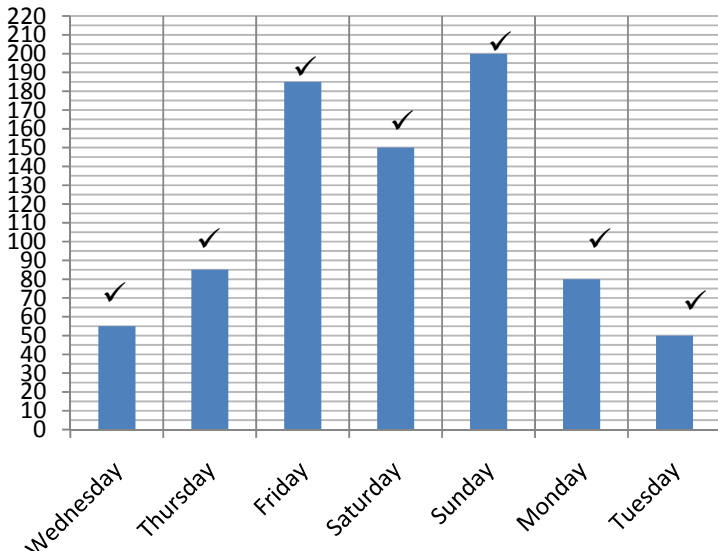
		SYMBOL	EXPLANATION			
		M	Method			
		MA	Method with Accuracy			
		CA	Consistent Accuracy			
		A	Accuracy			
		C	Conversion			
		S	Simplification			
		RT/RG	Reading from a table/graph			
		F	Choosing the correct formula			
		SF	Substitution in a formula			
		O	Opinion			
		P	Penalty: e.g. for: no units, incorrect rounding off etc.			
		R	Rounding off			
		G	Plotting/Drawing Graph			
QUESTION 1						
1.1	1.1.1	$\frac{65}{100} \checkmark$ $= \frac{13}{20} \checkmark$	M : 1 A : 1	(2)		12.1.1
	1.1.2	2,5(15,2 + 0,08) – 1,95 = 2,5(15,28) – 1,95 ✓ = 38,2 – 1,95 ✓ = 36,25 ✓	S: 1 (for 15,28) S : 1 CA : 1	(3)		12.1.1
	1.1.3	$\sqrt{81} + 2,25 \div 1,05$ = 9 + 2,14285✓✓ = 11,14 ✓	for: 9 S: 1 (for 2,14285) CA : 1 (rounding off)	(3)		12.1.1
	1.1.4	R8 300 x $\frac{16}{100} \checkmark \checkmark$ = R1328 ✓	M : 1 A : 1	(2)		12.1.1
1.2	1.2.1	R1 560 x $\frac{28}{100} \checkmark$ = R436,80 ✓	M : 1 A : 1	(2)		12.1.1
	1.2.2	1✓✓	A : 1; A : 1	(2)		12.4.5

1.3	1.3.1	$R29\,322 \div 12 \checkmark$ $= R2\,443,50 \checkmark$	M : 1 A : 1	(2)	12.1.1
	1.3.2	Increase for the year = $12 \times R250,00 \checkmark$ $= R3000,00 \checkmark$ New salary = $R2\,443,50 + R3000,00 \checkmark$ $= R2\,743,50 \checkmark$	M : 1 A : 1 M : 1 CA : 1	(4)	12.1.1
1.4		$\frac{66}{150} \times 100 \checkmark$ $= 44\% \checkmark$	M : 1 A : 1	(2)	12.1.1
1.5		$R24\,000 \times US\$ 0,13 \checkmark$ $= US\$ 3120 \checkmark$	M : 1 A : 1	(2)	12.1.3
1.6	1.6.1	Inside width = $40\text{ cm} - 30\text{ cm} = 10\text{ cm} \checkmark$ $= 10\text{ cm} + 2 \checkmark$ $= 5\text{ cm} \checkmark$	(for: 10) M : 1 A : 1	(3)	12.3.1
	1.6.2	Inside perimeter = $2(30 + 10) \checkmark$ $= 2 \times 40 \checkmark$ $= 80\text{ cm} \checkmark$	SF : 1 S : 1 CA : 1	(3)	12.3.1
				[30]	
QUESTION 2					
2.1	2.1.1	8:00 \checkmark	RG : 1	(1)	12.2.3
	2.1.2	Average speed = $1,5\text{ km} \div 30\text{ min} \checkmark$ $= 0,5\text{ km/min} \checkmark$	SF: 1 A : 1	(2)	12.2.3
	2.1.3	1 h and 30 min \checkmark	RG : 1	(1)	12.2.3
	2.1.4	10:00 \checkmark	RG: 1	(1)	12.2.3
	2.1.5	10:00 – 9:30 \checkmark $= 30\text{ min} \checkmark$	RG : 1 A : 1	(2)	12.2.3
	2.1.6	12:00 – 10:00 \checkmark $= 2\text{ h} \checkmark$	RG : 1 A : 1	(2)	12.2.3
	2.1.7	Start to rest-point \checkmark	RG : 1	(1)	12.2.3
	2.1.8	8 km \checkmark	A : 1	(1)	12.2.3
	2.1.9	12 h – 8 h – 30 min \checkmark $= 3\text{ h and }30\text{ min} \checkmark$	M : 1 A : 1	(2)	12.2.3

2.2	2.2.1	Japan ✓	RG : 1	(1)	12.4.4
	2.2.2	$1425700 - (101565 + 335175 + 14965 + 243674 + 26149 + 662161) ✓$ $= 1425700 - 1383689 ✓$ $= 42\,011\text{k tons} ✓$	M : 1 S : 1 CA : 1	(3)	12.4.2 12.1.1
	2.2.3	New Zealand ✓ and Finland ✓	RG : 1 RG : 1	(2)	12.4.4
	2.2.4	$\frac{335175}{1425700} \times 100\% ✓$ $= 23,5095\% ✓$ $= 23,5\% ✓$	RT : 1 M : 1 CA : 1	(3)	12.4.2 12.1.1
	2.2.5	$\frac{14\,965}{101\,565} ✓ = \frac{2\,993}{20\,313} ✓$	M : 1 A : 1	(2)	12.4.2 12.1.1
	2.2.6	26 149 ✓ : 14 965 ✓	RT : 1 RT : 1	(2)	12.1.1
				[26]	
QUESTION 3					
3.1	3.1.1	712 – 837 ✓✓	RT	(2)	12.4.2
	3.1.2	807 ✓	RT : 1	(1)	12.4.3
	3.1.3	$(801 + 805) \div 2 ✓$ $= 803 ✓$	M : 1 A : 1	(2)	12.4.3
	3.1.4	$(712+735+737+765+766+801+805+807 + 807 + 822 + 828 + 837) \div 12 ✓$ $= 785,166666 ✓$ $= 785,17 ✓$	M : 1 (for addition) M : 1 (for division) CA : 1	(3)	12.4.3
3.2	3.2.1	$(R120 \times 10) ✓$ $+ R320 + R160 ✓$ $+ R2\,000 ✓$ $= R3\,680 ✓$	M : 1 (for $R120 \times 10$) RT : 1 (for $R320$ & $R160$) RT : 1 (for $R2000$) CA : 1	(4)	12.1.1
	3.2.2 (a)	R3 880 ✓✓	SF : 1 A : 1	(2)	12.1.3
	3.2.2 (b)	R4 480 ✓✓	SF : 1 A : 1	(2)	12.1.3

	3.2.3 (a)	R3 060 ✓✓	SF: 1 A: 1	(2)	12.1.3
	3.2.3 (b)	R7 140 ✓✓	SF: 1 A: 1	(2)	12.1.3
3.2.4			<p>Cost graph: G : 1 (plotting any 2 points)✓ G : 1 (joining by st. line)✓</p> <p>Revenue graph: G : 1 (plotting any 2 points)✓ G : 1 (joining by st.line)✓</p> <p>Labelling ✓✓</p>	(6)	12.2.2
	3.2.5	1600 Units ✓	RG : 1	(1)	12.2.3
				[27]	
QUESTION 4					
4.1	$3,5\text{ m} + 3\text{ m}$ $= 6,5\text{ m}$ ✓		M : 1 A : 1	(2)	12.3.1
4.2	$2\text{ m} - 1,5\text{ m}$ $= 0,5\text{ m}$		M : 1 A : 1	(2)	12.3.1

4.3	4.3.1	Area of the door = $2 \text{ m} \times 1,2 \text{ m} \checkmark$ $= 2,4 \text{ m}^2 \checkmark$	SF : 1 A : 1	(2)	12.3.1
	4.3.2	Area of one window = $1,5 \text{ m} \times 1,3 \text{ m} \checkmark$ $= 1,95 \text{ m}^2 \checkmark$	SF : 1 A : 1	(2)	12.3.1
4.4		Area = $(8 \text{ m} \times 3,5 \text{ m}) \checkmark - (2,4 \text{ m}^2) \checkmark$ $- (2 \times 1,95 \text{ m}^2) \checkmark$ $= 28 \text{ m}^2 - 2,4 \text{ m}^2 - 3,9 \text{ m}^2$ $= 21,7 \text{ m}^2$	SF : 1; SF : 1; SF : 1 M : 1 A : 1	(5)	12.3.1
4.5		$30 \text{ cm} \times 10 \text{ cm} \checkmark$ $= 300 \text{ cm}^2 \checkmark$ $= 0,03 \text{ m}^2 \checkmark$	M : 1 A : 1 C : 1 (<i>conversion</i>)	(3)	12.3.1
4.6		$724 \times 1,05$ $= 760,2 \approx 761 \text{ bricks}$	M : 1 A : 1	(2)	12.1.1
4.7		$761 \times \text{R}6,75 \checkmark$ $= \text{R}5\,136,75 \checkmark$	M : 1 A : 1	(2)	12.3.1
4.8	4.8.1	12×35 $= 420 \text{ bricks}$	M : 1 A : 1	(2)	12.3.1
	4.8.2	$12 \text{ m}^2 \div 2,5 \checkmark$ $= 4,8 \text{ l} \approx 5 \text{ l} \checkmark$	M : 1 A : 1	(2)	12.1.1
				[24]	
QUESTION 5					
5.1	5.1.1	Lamb = $2,5 \times 450 \text{ g} \checkmark$ $= 1\,125 \text{ g} \checkmark$	C : 1 A : 1	(2)	12.3.2
	5.1.2	Onion = $12 \times 28 \text{ g} \checkmark$ $= 336 \text{ g} \checkmark$	C : 1 A : 1	(2)	12.3.2
5.2		Temperature = $\frac{(350^\circ\text{F} - 32)}{1,8} \checkmark$ $= \frac{318^\circ}{1,8} \checkmark$ $= 176,666^\circ\text{C} \checkmark = 177^\circ\text{C} \checkmark$	SF : 1 A : 1 (<i>for: 318</i>) M : 1 R : 1	(4)	12.3.2 12.1.1
5.3		$590 \text{ ml} \times 3 \checkmark = 1\,770 \text{ ml} \checkmark$ $= 1,77 \text{ l} \checkmark$	M : 1 A : 1; C : 1	(3)	12.3.2

5.4	Quantity of lamb $= 2,5 \text{ lb} \div 4 \times 10 \checkmark$ $= 6,25 \text{ lb} \checkmark$ $= 6,25 \text{ lb} \times 450 \text{ g} \checkmark$ $= 2\,812,5 \text{ g} \checkmark$ $= 2,81 \text{ kg} \checkmark$	M : 1 A : 1 C : 1 CA : 1 CA : 1	(5)	12.3.2 12.1.1
5.5	R65,00 x 0,45 = R29,25	M : 1 A : 1	(2)	12.1.1
			[18]	
QUESTION 6				
6.1.1	 <p>1 Mark for each correct bar</p>			12.4.2
			(7)	
6.1.2	Sunday ✓	RT: 1	(1)	12.4.4
6.1.3	Friday ✓	RT: 1	(1)	12.4.4
6.1.4	Tuesday ✓	RT: 1	(1)	12.4.4
6.1.5 (a)	$40 \times R5 = R200 \checkmark$ $20 \times R10 = R200 \checkmark$ $25 \times R20 = R500 \checkmark$ Total = R900 ✓	M : 1 M : 1 M : 1 A : 1	(4)	12.1.1
6.1.5 (b)	Profit ✓	O : 1	(1)	12.1.1
6.2.1 (a)	C2 ✓	RT: 1	(1)	12.3.4
6.2.1 (b)	E1 ✓	RT: 1	(1)	12.3.3

	6.2.2	North ✓	RT: 1	(1)	12.3.3
	6.2.3	$11,5 \times 125 \text{ m} \checkmark$ $= 1437,5 \text{ m} \checkmark$ $= 1\,438 \text{ m} \checkmark$	M : 1 A : 1 R : 1	(3)	12.1.1
	6.2.4	Time = $\frac{2,18 \text{ km}}{16 \text{ km/h}}$ $= 0,13625 \text{ h}$ $= 0,13625 \text{ h} \times 60$ $= 8 \text{ minutes}$	SF : 1 A : 1 C : 1 CA : 1	(4)	12.2.2
				[25]	
			TOTAL:	150	