Province of the
EASTERN CAPE
EDUCATION

NATIONAL
SENIOR CERTIFICATE

GRADE 11

NOVEMBER 2012

MATHEMATICAL LITERACY P2
MEMORANDUM

MARKS: 100

Symbol	Explanation
M	Method
MA	Method with accuracy
CA	Consistent accuracy
A	Accuracy
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	Justification
P	Penalty, e.g. for no units, incorrect rounding off etc.
R	Rounding Off/Reason

This memorandum consists of 8 pages.

QUESTION 1				
1.1				
LO3 AS 11.3.2	1.1.1	1 *tsp* = 5 *ml* **OR** *tsp* = $^{15}/_5$ ✓ 1 *tbsp* = 15 *ml* = 3 *tsp* x 2✓ 15 *ml* = 3 *tsp* ✓ = 6 *tsp* ✓ Therefore 30 *ml* = 3 *tsp* x 2 ✓ = 6 *tsp* ✓	(3)	1:C (*ml* to *tsp*) 1:M (x2) 1:A

LO3 AS 11.3.2	1.1.2	1 can = 4 people
		          20 people ✓
		           4 people
		           = 5 ✓
		Therefore to serve 20 people, 5 cans of naartjies will be used.
			(2)	1:M (20/4)
				1:A

LO3 AS 11.3.2	1.1.3	ºF = ºC x 1,8 + 32
		       = 220º x 1,8 + 32 ✓
		       = 396º ✓ + 32
		       = 428º ✓
		400º ≠ 430 º
		No, Gretchen did not set the oven's temperature in ºC Correctly. ✓
			(4)	1:SF
				1:S
				1:A
				1:R

1.2
LO3 AS 11.3.2
		1 *lb* (pound) 2 *oz* (ounce) Ostrich Fillet
		1 *lb* = 0,45359 *kg*
		1 *oz* = 0,0625 *lb*
		
		0,0625 *lb* x 0,45359 = 0,028349375 *kg* ✓ x 2 ✓
		                          = 0,05669875 *kg*
		Kilograms of ostrich fillet = 1 *lb* + 2 *oz*
		                          = 0,45359 *kg* + 0,05669875 *kg* ✓
		                          = 0,51028875 *kg* ✓
		                          = 0,5 *kg* ✓
			(5)	1:C (*lb* to *kg*)
				1: M (x2)
				
				1:M
				1:A
				1:R

1.3
LO3 AS 11.3.1
		Volume = $\pi r^2 h$
		          = 3,14 x 11 cm x 11 cm x 9 cm ✓✓
		          = 3 419,46 cm³ ✓
		
		If 1 000 cm³ = 1*l* then
		³⁴¹⁹'⁴⁶ cm³/₁ ₀₀₀ = 3,4 ℓ✓
		Yes, the casserole dish will be big enough to transfer the cooked meal. ✓
			(5)	1:A (radius)
				1:SF
				1:A
				
				1:C (cm³ to *l*)
				
				1:J

1.4				
LO1 AS 11.1.1	1.4.1	500 g = ½ *kg* ½ x R67 = R33,50 ✓	(1)	1:A

LO1 AS 11.1.2	1.4.2	VAT amount = (R33,50 + R12,59) ✓ x 0,14
		        = R46,09 x 0,14 ✓
		        = R6,45 ✓
			(3)	1:M (correct values) 1:M (x 14%) 1:A

LO1 AS 11.1.3	1.4.3	Although naartjies are fruit, in this case it processed (canned), while the oranges are fresh produce. ✓✓ **OR** No VAT is paid on fresh produce such as the oranges, but when it is canned VAT will be paid. ✓✓ **(Accept any other relevant explanation.)**	(2)	2:A
LO1 AS 11.1.3	1.4.4	As the 1 and 2 cent coins are no more in circulation, the final amount is rounded to the nearest 5 cent. ✓✓ **(Accept any other relevant explanation.)**	(2)	2:A
LO1 AS 11.1.3	1.4.5	No change is due to Gretchen as she paid only the due amount. ✓✓	(2)	2:A
LO1 AS 11.1.1	1.4.6	Afternoon ✓ 16:42 ✓	(2)	2:A
			[31]	

QUESTION 2				
2.1				
LO1 AS 11.1.1	2.1.1	Value of deposit = R250 000 x 0,16 ✓ = R40 000 ✓	(2)	1:M 1:A
LO 1 AS 11.1.1	2.1.2	P = R250 000 – R40 000 = R210 000 ✓ n = 72 / 12 = 6 years ✓ i = 9.5 / 100 = 0,095 $A = P(1 + ni)$ = 210 000 (1 + 6 x 0,095) ✓ = 210 000 (1+ 0,57) = 210 000 (1,57) ✓ = R329 700 ✓	(5)	1:A (P-value) 1:A (n-value) 1:SF 1:S 1:A
LO1 AS 11.1.1	2.1.3	I = A – P = R329 700 – R210 000 ✓ = R119 700 ✓	(2)	1:M 1:CA
2.2				
LO2 AS 11.2.1	2.2.1	$A = P(1 - i)^n$ = 250 000 $(1 - 0,2)^2$ ✓ = 250 00 $(0,8)^2$ = 250 000 (0,64) ✓ = R160 000 ✓ **OR** $A = P(1 - i)^n$ = 200 000 $(1 - 0,2)^1$ ✓ = 200 000 $(0,8)^1$ ✓ = R160 000 ✓	(3)	1:SF 1:S 1:A
LO1 AS 11.2.2	2.2.2		(5)	1 mark for each for (0,250 000) (1,200 000) (2,160 000) (3,128 000) (4,102 400)
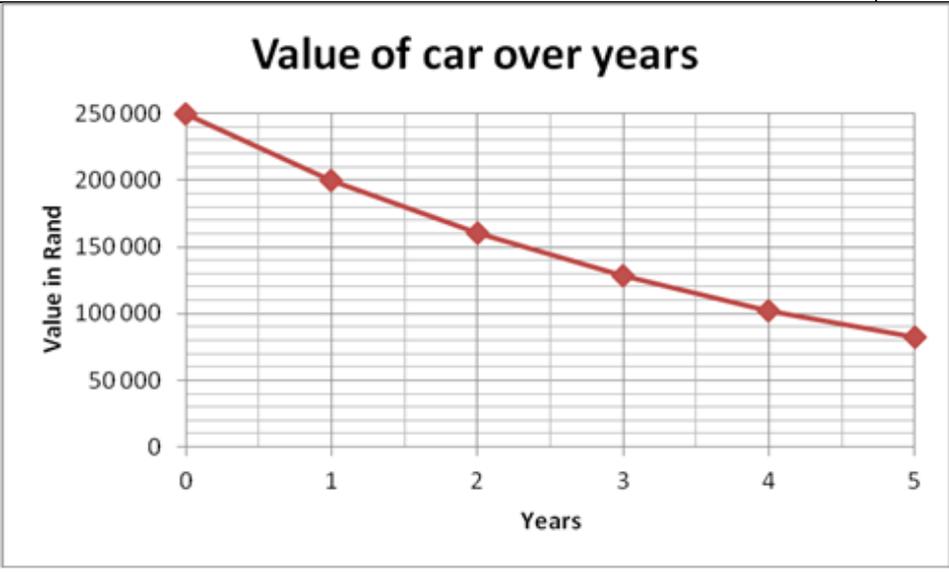
LO1 AS 11.2.3	2.2.3	Indirect or Inverse proportion ✓ As the years increase, the values of the car decrease. ✓	(2)	1:A 1:R
2.3 LO4 AS 11.4.5		P(silver) = $^3/_{14}$ ✓✓ **OR** 0,214 ✓✓ **OR** 21,4% ✓✓	(2)	1:A (numerator) 1:A (denominator)
			[21]	

QUESTION 3					
3.1					
LO4 AS 11.4.5	3.1.1	5 ✓ Teams cannot play against themselves ✓		(2)	1:A 1:R
LO4 AS 11.4.5	3.1.2	10 ✓✓		(2)	2:A
LO4 AS 11.4.5	3.1.3	4 ✓✓		(2)	2:A
LO4 AS 11.4.5	3.1.4	10 ✓✓		(2)	2:A
LO4 AS 11.4.5	3.1.5	¼ ✓✓ **OR** 0,25 ✓✓ **OR** 25% ✓✓		(2)	1:A (numerator) 1:A (denominator)
LO4 AS 11.4.5	3.1.6	$^1/_{16}$ ✓✓ **OR** 0,063 ✓✓ **OR** 6,3% ✓✓		(2)	1:A (numerator) 1:A (denominator)
3.2					
LO2 AS 11.2.1	3.2.1	(a)	$s = 5t + 2c + 3p$ ✓✓✓	(3)	3:F
LO2 AS 11.2.1		(b)	$s = 5t + 2c + 3p$ $= (5 \times 6) + (2 \times 5) + (3 \times 3)$ ✓ $= 30 + 10 + 9$ $= 49$ ✓	(2)	1:SF (correct values) 1:CA
LO2 AS 11.2.1	3.2.2	For 1 penalty ✓		(1)	1:A
3.3					

LO1 AS 11.1.1	3.3.1	1 ZAR (South African Rand) = 0,15761 NZD
		 Category B = 123 NZD ✓
		
		 ZAR = $^{123\ NZD}/_{0,15761\ NZD}$ ✓
		      = 780,4073346
		      = 780,41 ✓
				(3)	1:RT (123)
					
					 1:M
					
					 1:A

LO1 AS 11.1.1	3.3.2	1 NZD = R6,3450 ZAR 200 NZD ZAR = 200 x 6,3450 ✓ = R1 269 ✓		(2)	1:M 1A
				[23]	

QUESTION 4				
4.1				
LO2 AS 11.2.3	4.1.1	Cost price for 1 CD = $^{(80-30)}/_{10}$ ✓ **OR** Cost price for 1 CD = $^{(130-30)}/_{20}$ ✓ $\quad\quad\quad\quad\quad\quad\quad = {}^{50}/_{10} \quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad = {}^{100}/_{20}$ $\quad\quad\quad\quad\quad\quad\quad = R5$ ✓ $\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad = R5$ ✓ Cost price for 1 CD = $^{(180-30)}/_{30}$ ✓ **OR** Cost price for 1 CD = $^{(230-30)}/_{10}$ ✓ $\quad\quad\quad\quad\quad\quad\quad = {}^{150}/_{30} \quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad = {}^{200}/_{40}$ $\quad\quad\quad\quad\quad\quad\quad = R5$ ✓ $\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad = R5$ ✓ Cost price for 1 CD = $^{(280-30)}/_{50}$ ✓ **OR** Cost price for 1 CD = $^{(330-30)}/_{60}$ ✓ $\quad\quad\quad\quad\quad\quad\quad = {}^{250}/_{50} \quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad = {}^{300}/_{60}$ $\quad\quad\quad\quad\quad\quad\quad = R5$ ✓ $\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad = R5$ ✓ Cost price for 1 CD = $^{(380-30)}/_{70}$ ✓ **OR** Cost price for 1 CD = $^{(430-30)}/_{80}$ ✓ $\quad\quad\quad\quad\quad\quad\quad = {}^{350}/_{70} \quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad = {}^{400}/_{80}$ $\quad\quad\quad\quad\quad\quad\quad = R5$ ✓ $\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad = R5$ ✓ Cost price for 1 CD = $^{(480-30)}/_{90}$ ✓ $\quad\quad\quad\quad\quad\quad\quad = {}^{450}/_{90}$ $\quad\quad\quad\quad\quad\quad\quad = R5$ ✓	(2)	1:M 1:A
	4.1.2	Selling price of 1 CD = $^{60}/_{10}$ ✓ **OR** Selling price of 1 CD = $^{120}/_{20}$ ✓ $\quad\quad\quad\quad\quad\quad\quad\quad = R6$ ✓ $\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad = R6$ ✓ Selling price of 1 CD = $^{180}/_{30}$ ✓ **OR** Selling price of 1 CD = $^{240}/_{40}$ ✓ $\quad\quad\quad\quad\quad\quad\quad\quad = R6$ ✓ $\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad = R6$ ✓ Selling price of 1 CD = $^{300}/_{50}$ ✓ **OR** Selling price of 1 CD = $^{360}/_{60}$ ✓ $\quad\quad\quad\quad\quad\quad\quad\quad = R6$ ✓ $\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad = R6$ ✓ Selling price of 1CD = $^{420}/_{70}$ ✓ **OR** Selling price of 1CD = $^{480}/_{80}$ ✓ $\quad\quad\quad\quad\quad\quad\quad\quad = R6$ ✓ $\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad = R6$ ✓ **OR** Selling price of 1CD = $^{540}/_{90}$ ✓ $\quad\quad\quad\quad\quad\quad\quad\quad = R6$ ✓	(2)	1:M 1:A
LO2 AS 11.2.3	4.1.3	Percentage profit = $\dfrac{\text{(Income – Expenses)} \times 100}{\text{Expenses}}$ $\quad\quad\quad\quad\quad\quad = \dfrac{6-5}{5} \times 100$ % profit $= {}^{1}/_{5} \times 100$ ✓ $\quad\quad\quad\quad = 20\%$ ✓	(2)	1:M 1:A
LO2 AS 11.2.1	4.1.4	30 ✓ ; 180 ✓	(2)	1:A (30) 1:A (180)

LO2 AS 11.2.1	4.1.5	Break-even point ✓ For 30 CD's the income and expenses are exactly the same (R180). ✓	(2)	1:A 1:R
LO2 AS 11.2.3	4.1.6	Before the breakeven point the income is less than the expenses. ✓✓ **OR** Before the breakeven point the expenses is more than the income ✓✓	(2)	2:A
LO2 AS 11.2.3	4.1.7	There is an initial cost of R30 (transport cost) ✓✓	(2)	2:A
4.2				
LO4 AS 11.4.3	4.2.1	25% of the sales were 15 and less CD's for the month ✓✓	(2)	2:A
LO4 AS 11.4.3	4.2.2	75% of the sales were 37 and more CD's for the month ✓✓	(2)	2:A
LO4 AS 11.4.3	4.2.3	Yes. ✓ Most of the CD's he sold is above 15 (75%). ✓	(2)	1:A 1:R

4.3
LO3 AS 11.3.1 11.3.2
		Diameter of outer circle = 118 mm = 11,8 cm ✓
		Radius of outer circle = 5,9 cm ✓
		
		Radius of inner circle = 0,75 cm
		
		Area of CD = Area of outer circle − Area of inner circle
		        = $\pi r^2 - \pi r^2$
		        = 3,14 x 5,9^2 – 3,14 x 0,75^2 ✓
		        = 109,30 cm^2 – 1,77 cm^2 ✓
		        = 107,53 cm^2 ✓
		OR
		Area of CD = Area of outer circle − Area of inner circle
		        = $\pi r^2 - \pi r^2$
		        = 3,14 x 5,9 cm x 5,9 cm – 3,14 x 0,75 cm x 0,75 cm ✓
		        = 109,3034 cm^2 – 1,76625 cm^2 ✓
		        = 107,53715 cm^2
		        = 107,54 cm^2 ✓
			(5)	1:C (mm to cm)
				1:A (finding r)
				
				1:SF
				1:S
				1:CA

			[25]	
		TOTAL:	**100**	