NATIONAL
SENIOR CERTIFICATE

GRADE 12

MATHEMATICAL LITERACY P1

MEMORANDUM

EXEMPLAR 2008

MARKS: 150

TIME: 3 hours

This memorandum consists of 15 pages.

QUESTION 1 [30]		
1.1.1	$370 + 24,8 \times 20$ $= 370 + (24,8 \times 20)$ $= 866$ ✓✓	Method 1 Answer 2 (2)
1.1.2	$\frac{1}{2}(23 + 11) - 11$ $= (34 \div 2) - 11$ $= 17$ ✓ $- 11$ $= 6$ ✓	Method 1 Answer 1 (2)
1.1.3	$\frac{2}{3} \times 120\,\text{km} = 120 \times 2 \div 3$ $\qquad = 240 \div 3$ $\qquad = 80\ \text{km}$ ✓	Answer 1 (1)
1.1.4	23% of 200 sheep $= \dfrac{23}{100} \times 200$ sheep ✓ $\qquad\qquad = 46$ sheep ✓	Method 1 Answer 1 (2)
1.2.1	$0,15 = \dfrac{15}{100} = 15\%$	Answer 1 (1)
1.2.2	METHOD 1 $\dfrac{1}{25} = \dfrac{1 \times 4}{25 \times 4} = \dfrac{4}{100} = 0,04$ ✓ METHOD 2 $\qquad \underline{0\,,0\,4}$ ✓ $25 \mid 1\,,0\,0$ METHOD 3 Key Sequence using the calculator: 1 [÷] 4 [=] ✓	Answer 1 (1)
1.2.3	$60\% : 12\%$ $= 60 : 12$ $= (60 \div 12) : (12 \div 12)$ ✓ $= 5 : 1$ ✓	Method 1 Answer 1 (2)

1.2.4	METHOD 1 110% of R400 ✓ $= \dfrac{110}{100} \times$ R400 = R440 ✓ METHOD 2 10% of R400 $= \dfrac{10}{100} \times$ R400 = R40 ✓ Increase R400 by 10% = R400 + R40 = R440 ✓	Method 1 Answer 1 (2)
1.3.1	8 oz = 8 × 30g ✓ = 240 g ✓	Conversion 1 Answer 1 (2)
1.3.2	Any acceptable answer less than 2,5mℓ of salt✓	Answer 1 (1)
1.3.3	$\dfrac{1}{4} \times 560$ mℓ ✓ = 140 mℓ ✓	Multiplication 1 Answer in mℓ 1 (2)
1.3.4	Temperature in °C = (Temperature in °F – 32°) × $\dfrac{5}{9}$ $= (430° - 32°) \times \dfrac{5}{9}$ ✓ $= 398° \times \dfrac{5}{9}$ $= 221,111$ °C✓ $= 220$ °C✓	Substitution 1 Simplification 1 Rounding off 1 (3)
1.3.5	Tandeka's income = 48 × R1,20 ✓ = R57,60✓	Multiplication 1 Answer 1 (2)
1.3.6	R36,00 ÷ R1,20 ✓ = 30 scones✓ She will recover her costs by selling 30 scones.	Division 1 Answer 1 (2)

1.4.1	Earnings for Monday = Basic Salary + R5,00 × number of cars washed = R30,00 + R5,00 × 6 cars✓ = R30,00 + R30,00 ✓ = R60,00 ✓	Method 1 Substitution 1 Answer 1 (3)
1.4.2	Probability that he washed a blue car first on Monday $= \dfrac{\text{number of blue cars}}{\text{total number of cars}}$ ✓ $= \dfrac{1}{6}$ ✓	Method 1 Answer 1 (2)
		[30]

QUESTION 2 [30]

2.1.1	20 km✓	Answer 1 (1)
2.1.2(a)	She took 40 minutes ✓to reach point A.	Answer 1 (1)
2.1.2(b)	She took 100 minutes ✓✓to cover 10 km	Answer 2 (2)
2.1.2(c)	She took 150 minutes ✓✓to cover 15 km.	Answer 2 (2)
2.1.3	200 min = 200 ÷ 60 hr✓ = 3,333… hrs ✓ = 3,3 hrs✓	Division 1 Hours 1 Rounding off 1 (3)
2.1.4	Average Speed = $\dfrac{distance}{time}$ ✓ = $\dfrac{20km}{200\,min}$ ✓ = 0,1 km/min ✓	Substitution 1 Division 1 Answer 1 (3)
2.1.5	Time taken by the winner = 80% of 200 min = $\dfrac{80}{100} \times 200\,min$ ✓ = 160 minutes✓	Multiplication 1 Answer 1 (2)
2.2.1	C = $2\pi r$ = $2\times (3,14) \times 12$ m ✓ = 75,36 m ✓	Substitution 1 Answer 1 (2)
2.2.2	A = $\pi \times r^2$ = $3,14 \times (12)^2$ ✓ = 452,16✓ m^2 ✓	Substitution 1 Answer 1 Unit 1 (3)
2.2.3	Mass of the fertilizer needed = $\dfrac{252m^2}{6,3m^2}$ ✓ = 40✓kg. ✓	Division 1 Answer 1 Unit 1 (3)

2.3.1	Group 1 – R3 000 ✓	Answer for group 1 1
	Group 2 – R20 000 ✓	Answer for group 2 1
		(2)
2.3.2	25% + 55% + housing = 100%✓	Total = 100% 1
	Housing = 20 %✓	Answer 1
		(2)
2.3.3	Housing = 40% of R20 000	
	$= \dfrac{40}{100} \times R\,20\,000$ ✓	Multiplication 1
	= R8 000✓	Answer 1
		(2)
2.3.4	Any two possible household expenses.	
	Examples:	
	Light and Water account, ✓	Answer 1
	Transport Cost, ✓	
	Repairs to home	Answer 1
	School fees	
	Clothing	
	Medical expenses	
		(2)
		[30]

QUESTION 3 [19]		
3.1	07:30 + 6 = 13:30 ✓ She finishes work at 13:30 ✓	Adding or counting forward 1 Answer 1 (2)
3.2	Each Saturday Andile earns 6 × R8,50 ✓ = R51,00 ✓	Multiplication 1 Answer 1 (2)
3.3	Total cost of the outing = R55,00 + R150,00 + R138,00 ✓ = R 343,00 ✓	Addition 1 Answer 1 (2)
3.4	The cost of 5 return bus tickets = R55,00 The cost of 1 return ticket = R55,00 ÷ 5 ✓ = R11,00 ✓	Method 1 Answer 1 (2)
3.5	Savings = 10% of R150,00 $= \dfrac{10}{100} \times$ R150,00 ✓ = R 15,00 ✓	Concept 1 Answer 1 (2)
3.6	METHOD 1 Saving on travelling costs $= \dfrac{1}{2}$ of travelling costs $= \dfrac{1}{2} \times$ R 55,00 ✓ = R 27,50 ✓ METHOD 2 Saving on travelling costs = R 55,00 ÷ 2 ✓ = R27,50 ✓	METHOD 1 Multiplication 1 Answer 1 METHOD 2 Division 1 Answer 1 (2)

3.7	Cost of 4 small snack packs @ R27,00 + 1 × large snack pack = R138,00 ✓ 4 × R27,00 + 1 × cost of 1 large snack pack = R138,00 So the cost of 1 large snack pack = R138,00 – R108,00 ✓ = R30,00 ✓	1 method Subtraction 1 Answer 1 (3)
3.8.1	Probability of choosing Smarties $= \dfrac{\text{number of sweet choices that are Smarties}}{\text{number of sweet choices}}$ ✓ $= \dfrac{1}{3}$ (or $0,\dot{3}$ or $33,\dot{3}\%$) ✓	Concept 1 Answer 1 (2)
3.8.2	Probability of choosing milkshake $= \dfrac{\text{number of drinks choices that are milkshake}}{\text{number of drink choices}}$ ✓ $= \dfrac{0}{3}$ ✓ $= 0$	Concept 1 Answer 1 (2)
		[19]

QUESTION 4 [11]		
4.1	Area of netball court = 15,25 m × 30,5 m ✓ = 465,125 m² ✓	Substitution 1 Multiplication 1 (2)
4.2	Total cost of nets = 2 × R 24,80 ✓ = R49,60 ✓	Multiplication 1 Answer 1 (2)

4.3	METHOD 1
	$5\,\ell = 2\,\ell + 2\,\ell + 1\,\ell$
	
	So the area covered by the paint
	= 3 m² + 3 m² + 1,5 m² ✓
	= 7,5 m² ✓
	
	METHOD 2
	$5\,\ell$ covers = (5 × what $1\,\ell$ covers) ✓
	         = 5 × 1,5 m²
	         = 7,5 m² ✓
		METHOD 1
		
		Addition 1
		Answer 1
		
		METHOD 2
		
		Multiplication 1
		Answer 1
		 (2)

4.4	METHOD 1 In 5 hrs we need 4 workers In 1 hr we need 4 × 5 = 20 workers So, in 2,5 hrs we will need $\dfrac{20}{2,5}$ ✓ = 8 workers ✓ METHOD 2 In 5 hrs we need 4 workers In half the time, double the number of workers are needed ✓ So 8 workers will be needed. ✓	METHOD 1 Concept 1 Answer 1 METHOD 2 Concept 1 Answer 1 (2)

4.5	METHOD 1 METHOD 2
	$I = \dfrac{17}{100} = 0{,}17$ ✓ S.I. $= P \times n \times i$
	                          ✓
	S.I. $= P \times n \times i$ $= R11\,000 \times 5 \times \dfrac{17}{100}$ ✓
	     = R11 000× 5×0,17 ✓ = R11 000× 5×0,17
	     = R9 350 ✓ = R9 350 ✓
		Conversion of i 1
		
		Substitution 1
		
		Answer 1
		 (3)

		[11]

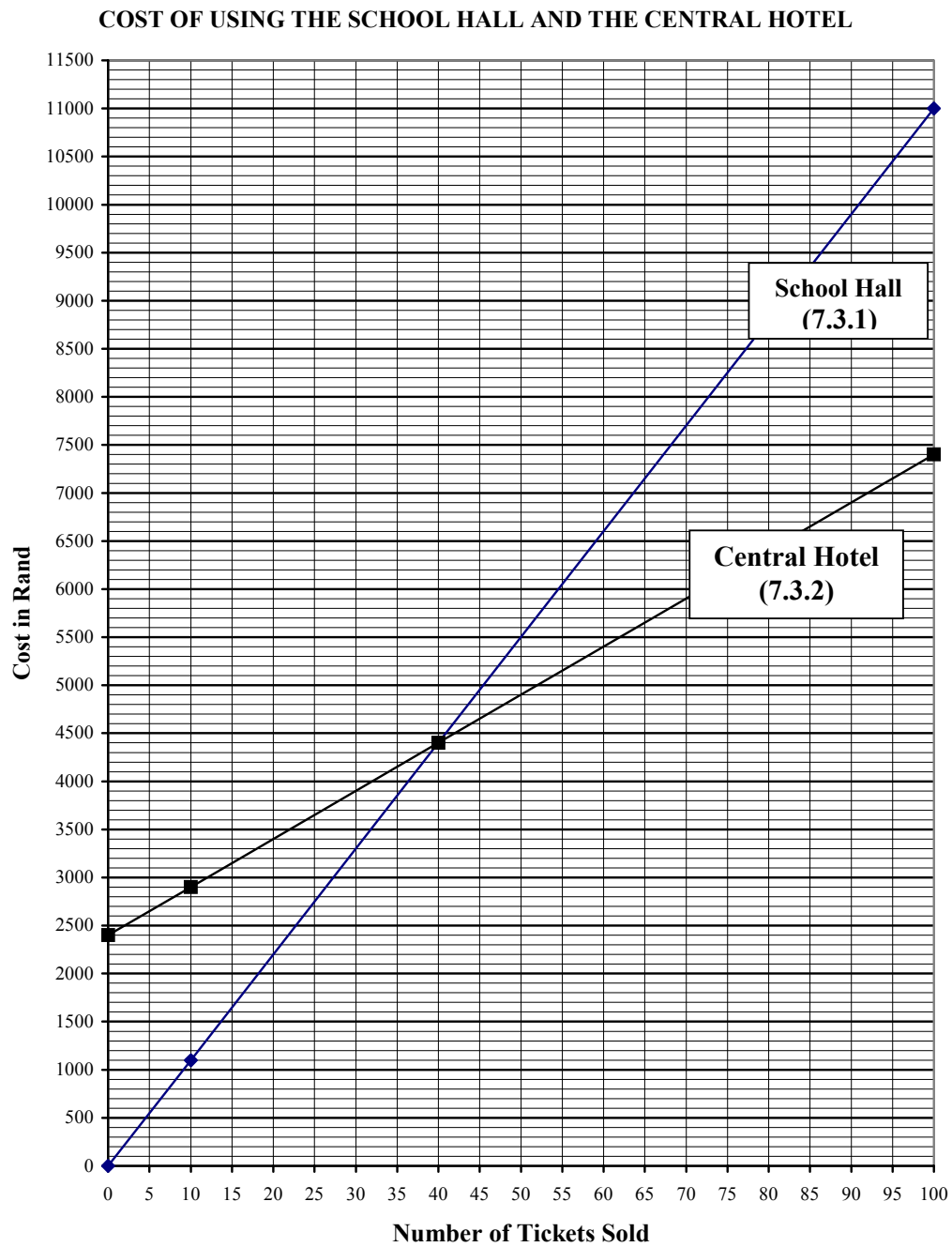
QUESTION 5 [22]

5.1.1	Johannesburg has a higher total rainfall than Cape Town ✓	Answer 1 (1)

5.1.2	Range = highest ✓ – lowest ✓
	      = 125 mm – 4 mm
	      = 121 mm ✓
		Highest 1
		Lowest 1
		Answer 1 (3)

5.1.3	Johannesburg has mainly summer rainfall ✓	Answer 1 (1)
5.1.4	June ✓ and July ✓ have rainfall greater than 80mm	Answer 1 Answer 1 (2)
5.1.5	There is a decrease ✓✓ (gets less) in the amount of rainfall from January to April.	Answer 1 (2)

5.1.6	Average number of days = $\dfrac{\text{Total number of rainy days}}{\text{number of months}}$ ✓
	
	      $= \dfrac{104}{12} = 8{,}66$ ✓
	      $= 9$ days per month ✓
		Method 1
		Answer 1
		Rounding off 1 (3)

5.2.1	The grid reference for Cape Town is E2 ✓	Answer 1 (1)
5.2.2	Towns shown on the map as being on the N1 are Paarl, Worcester, Beaufort West ✓, Bloemfontein ✓, and Kroonstad	Any two 2 (2)
5.2.3	The general direction from Cape Town to Johannesburg is North-East ✓ (also accept north **or** east)	Answer 1 (1)

5.2.4	Distance between Cape Town and Johannesburg	
	$= 80 \times 16\,000\,000$ mm ✓	Multiplication 1
	$= 1\,280\,000\,000$ mm ✓	Answer 1
	$= 1\,280\,000$ m	
	$= 1\,280$ km ✓	Answer 1 (3)
5.2.5	To travel to Johannesburg via Kimberley they would travel on the N1, and then on the N12. ✓ ✓	Answer 2 (2)
5.2.6	✓ Kimberley is to the right of Bloemfontein **Or** to the west of Bloemfontein (also accept any other suitable answer)	Answer 1 (1)
		[22]

QUESTION 6 [12]		
6.1	Tank B has the smallest surface area ✓ The dimensions of Tank B are: Length = 128 cm Breadth = 125 cm ✓ Height = 125 cm	Method 1(correct tank) Answer 1 (2)

6.2.1	Area of base = length × breadth ✓
	
	         = 160 cm × 100 cm ✓
	
	         = 16 000 cm^2 ✓
		Method 1
		
		Substitution 1
		
		Answer 1
		(3)

6.2.2	Surface area = 2×[$l \times b + l \times h + b \times h$] = 2×[160 × 156,25 + 160 × 80 + 156,25 × 80] cm^2 ✓ = 2 × [25 000 + 12 800 + 12 500] cm^2 ✓ = 2 × 50 300 cm^2 ✓ = 100 600 cm^2 ✓	 Substitution 1 Working out 1 Working out 1 Answer 1 (4)

6.3.1	Construction cost = 95 250 cm^2 × 1,2 cents/cm^2 ✓
	
	          = 114 300 cents ✓
	
	          = R1 143 ✓
		Method 1
		
		Substitution 1
		
		Answer 1
		(3)

		[12]

QUESTION 7 [26]		
7.1.1	METHOD 1 Cost for 50 tickets = cost of 40 tickets + cost of 10 tickets ✓ = R4 400 + R1 100 ✓ = R 5 500 ✓ METHOD 2 Cost for 50 tickets = 2 × (cost of 25 tickets) ✓ = 2 × R2 750 ✓ = R 5 500 ✓ **OR** Any other suitable method	METHOD 1 Method 1 Substitution 1 Answer 1 METHOD 2 Method 1 Substitution 1 Answer 1 (3)
7.1.2a	✓ ✓ 40 tickets	Answer 2 (2)
7.1.2b	Cost = R4 400 ✓	Answer 1 (1)
7.2	METHOD 1 Total Cost = R2 400 + (number of tickets × R50) 8 400 = R2 400 + (number of tickets × R50) (number of tickets × R50) = 8 400 - 2 400 = 6 000 ✓ number of tickets = 6 000 ÷ 50 ✓ number of tickets = 120 ✓ METHOD 2 Cost of 100 tickets = R7 400 ✓ Cost of 20 tickets = 20 × cost of food = 20 × R50 = R1 000 ✓ Cost of 120 tickets = R7 400 + R1 000 = R8 400 number of tickets = 120 ✓	METHOD 1 subtraction 1 division 1 answer 1 METHOD 2 Concept 1 Calculation 1 Answer 1 (3)

7.3.1 and 7.3.2

COST OF USING THE SCHOOL HALL AND THE CENTRAL HOTEL

School Hall (7.3.1)

Central Hotel (7.3.2)

Cost in Rand

Number of Tickets Sold

For each graph
Plotting points   2
Joining points correctly   1
Label 1   (4) x 2   (8)

7.4.1a	The boys liked ✓ traditional dress least	Answer 1 (1)
7.4.1b	The sample liked ✓ casual dress least	Answer 1 (1)
7.4.2	Most girls preferred ✓ formal dress	Answer 1 (1)
7.4.3	✓ 8 boys preferred traditional dress	Answer 1 (1)
7.4.4	Girls who preferred casual dress = total – boys who preferred casual dress ✓ = 23 – 15 = 8 ✓ **OR** Answer only Full Marks	Method 1 Answer 1 (2)
7.4.5	Total number of respondents = 32 + 23 + 24 ✓ ✓ = 79 ✓	Concept 1 Readings 1 Answer 1 (3)
		[26]

TOTAL: **150**