



education

Department:
Education
REPUBLIC OF SOUTH AFRICA

**NATIONAL
SENIOR CERTIFICATE**

GRADE 12

MATHEMATICAL LITERACY P1

EXEMPLAR 2008

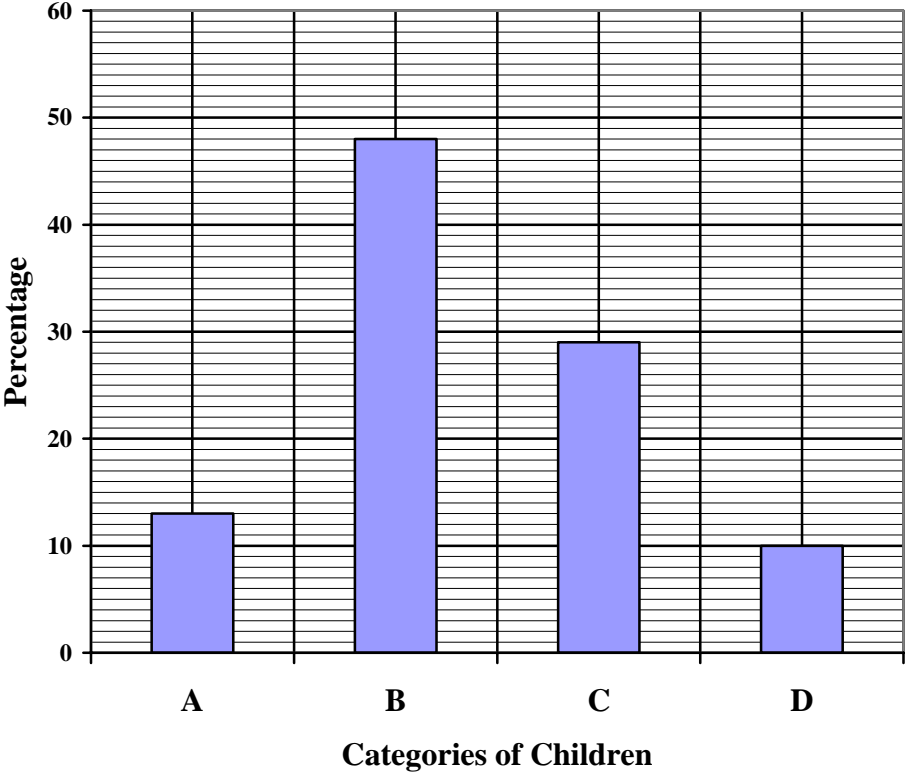
MARKING MEMORANDUM

This memorandum consists of 14 pages

QUESTION 1 [19]		
1.1	$07:30 + 6 = 13:30$ ✓ She finishes work at 13:30 ✓	Adding or counting forward 1 Answer 1 (2)
1.2	Each Saturday Andile earns = $6 \times R8,50$ ✓ $= R 51,00$ ✓	Multiplication 1 Answer 1 (2)
1.3	Total cost of the outing $= R55,00 + R150,00 + R138,00$ ✓ $= R 343,00$ ✓	Addition 1 Answer 1 (2)
1.4	The cost of 5 return bus tickets = R55,00 The cost of 1 return ticket = $\frac{R55,00}{5}$ ✓ $= R11,00$ ✓	Method 1 Answer 1 (2)
1.5	Savings = 10% of R150,00 $= \frac{10}{100} \times R150,00$ ✓ $= R 15,00$ ✓	Concept 1 Answer 1 (2)
1.6	Saving on travelling costs METHOD 1 $= \frac{1}{2}$ of travelling costs $= \frac{1}{2} \times R 55,00$ ✓ $= R 27,50$ ✓ METHOD 2 $= R 55,00 \div 2$ ✓ $= R27,50$ ✓	METHOD 1 Multipl 1 Answer 1 METHOD 2 Division 1 Answer 1 (2)

1.7	$\begin{aligned} & \text{Cost of 4 small snack packs @ R27,00} + 1 \times \text{large snack packs} \quad \checkmark \\ & = \text{R138,00} \\ & 4 \times \text{R27,00} + 1 \times \text{cost of 1 large snack pack} = \text{R138,00} \\ & \text{So the cost of 1 large snack pack} = \text{R138,00} - \text{R108,00} \quad \checkmark \\ & = \text{R30,00} \quad \checkmark \end{aligned}$	1 method Subtraction 1 Answer 1 (3)
1.8.1	$\begin{aligned} & \text{Probability of choosing Smarties} \\ & = \frac{\text{no. of sweet choices that are Smarties}}{\text{no. of sweet choices}} \quad \checkmark \\ & = \frac{1}{3} \text{ (or } 0,\dot{3} \text{ or } 33,\dot{3}\% \text{)} \quad \checkmark \end{aligned}$	Concept 1 Answer 1 (2)
1.8.2	$\begin{aligned} & \text{Probability of choosing milkshake} \\ & = \frac{\text{no. of drinks choices that are milkshake}}{\text{no. of drink choices}} \quad \checkmark \\ & = \frac{0}{3} \quad \checkmark \\ & = 0 \quad \checkmark \end{aligned}$	Concept 1 Answer 1 (2)
		[19]

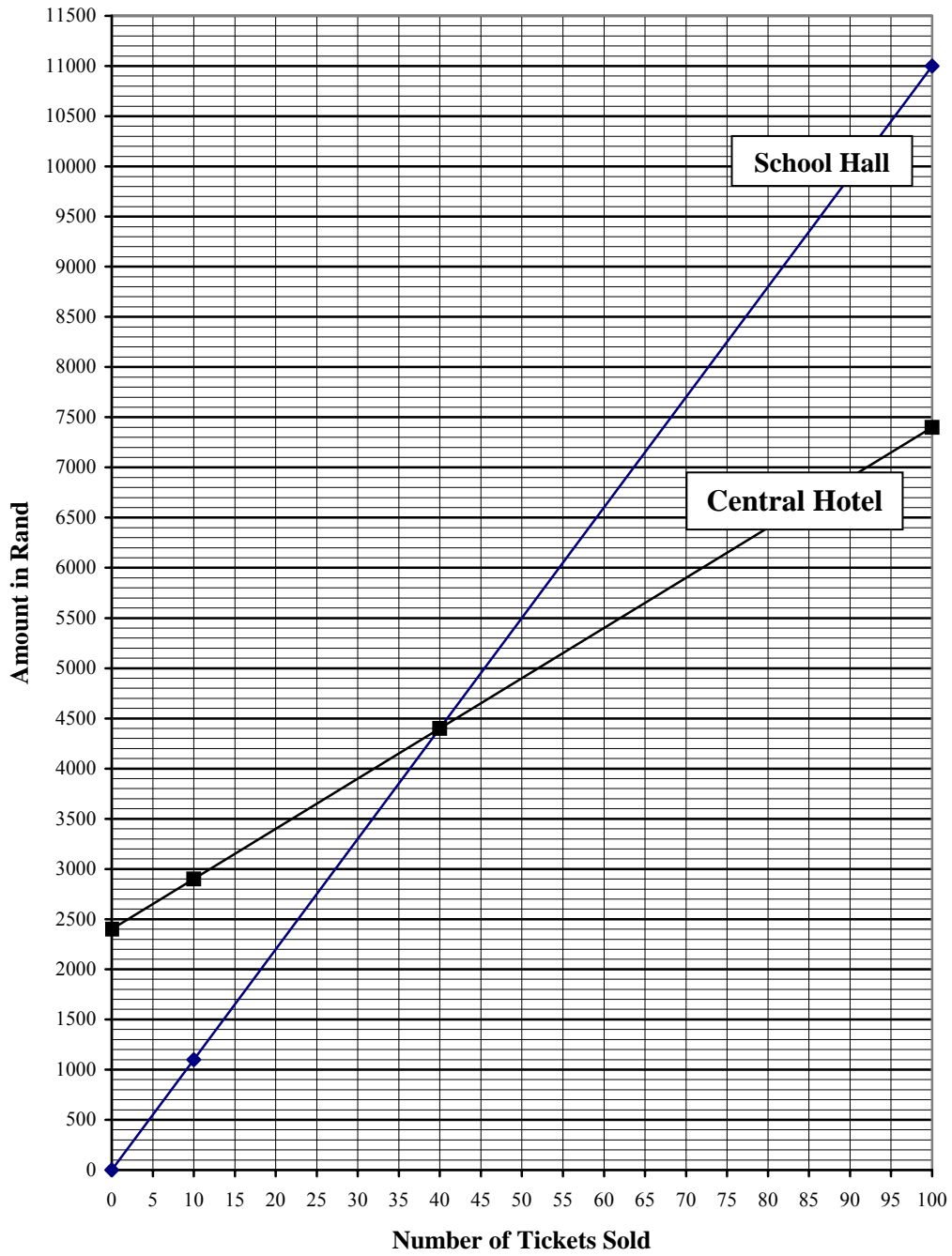
QUESTION 2 [24]		
2.1.1	1 March 2006 – 28 February 2007 ✓	Ans. 1 (1)
2.1.2	The main source of income is the subsidy from the local municipality. ✓	Ans 1 (1)
2.1.3	Average cost of one school uniform = R10 047 48 ✓ = R209,3125 ✓ = R209,31 ✓	concept 1 Answer 1 Correct rounding off 1 (3)
2.1.4	$R57\ 120 = \text{€} \frac{57\ 120}{9,52}$ ✓ = € 6 000 ✓	Concept 1 Substitution 1 Answer 1 (3)
2.1.5	$\frac{\text{Subsidy from the Local Municipality}}{\text{Total income}} \times 100\%$ ✓ = $\frac{308\ 160}{443\ 520} \times 100\%$ ✓ = 69,48051948 % ✓ = 69,5% ✓	Formula or implied 1 Subst. 1 Ans. 1 Rounding off 1 (4)
2.1.6a	Petrol or service fee (maintenance) or license fee or toll fee (any suitable answer) ✓	Answer 1 (1)
2.1.6b	Cost of travelling 1 km = R22 822 18 554 ✓ = R1,23003 ✓ = R1,23 ✓	Knowing to divide 1 Answer 1 Correct rounding off 1 (3)

<p>2.2.1</p>	<p>Number of children living with relatives</p> <p>= 48% of 1 712 children ✓</p> <p>$= \frac{48}{100} \times 1\,712$ children</p> <p>= 821,76 ✓</p> <p>= 822 children ✓</p>	<p>Method of percentage</p> <p>Solution</p> <p>Rounding off</p> <p>(3)</p>
<p>2.2.2</p>	<p style="text-align: center;">CATEGORIES OF CHILDREN AS A PERCENTAGE OF THE TOTAL NUMBER</p>  <p style="text-align: center;">1 mark for each bar x 4 and labels 1 mark for overall neatness</p> <p style="text-align: right;">(5)</p>	
<p>[24]</p>		

QUESTION 3 [30]		
3.1.1	20 tickets ✓	Answer 1 (1)
3.1.2	<p>Cost for 50 tickets = cost of 40 tickets + cost of 10 tickets ✓ = R4 400 + R1 100 ✓ = R 5 500 ✓</p> <p>OR</p> <p>Cost for 50 tickets = 2 × (cost of 25 tickets) ✓ = 2 × R2 750 ✓ = R 5 500 ✓</p> <p>OR Any other suitable method</p>	<p>Method 1 Substitution 1 Ans 1</p> <p>Method 1 Substitution 1 Ans 1 (3)</p>
3.2	<p>40 tickets ✓ ✓ Cost = R4 400 ✓</p>	<p>Answer 2 Answer 1 (3)</p>
3.3.1	<p>Total Cost = R2 400 + (number of tickets) × R50 = R2 400 + 47 × R50 ✓ = R4 750 ✓</p>	<p>Substitution 1 Answer 1 (2)</p>
3.3.2	<p>Cost = R2 400 + (number of tickets) × R50 7 500 = R2 400 + (number of tickets) × R50 (number of tickets) × R50 = 7 500 - 2 400 = 5 100 ✓ number of tickets = 5 100 ÷ 50 ✓ number of tickets = 102 ✓</p> <p>OR</p> <p>Cost of 100 tickets = R7 400 ✓ Cost of 2 tickets = 2 × cost of food ✓ = 2 × R50 ✓ Cost of 102 tickets = R7 400 + R100 = R7 500 number of tickets = 102 ✓</p>	<p>subtraction 1 division 1 answer 1</p> <p>1 concept 1 calculation 1 answer (3)</p>

3.4

COST OF USING THE SCHOOL HALL AND THE CENTRAL HOTEL



For each graph

Plotting points 2

Joining points correctly 1

Label 1

(4) x 2

(8)

3.5.1a	The boys liked traditional dress least ✓	Answer 1 (1)
3.5.1b	The sample liked casual dress least ✓	Answer 1 (1)
3.5.2	Most girls preferred formal dress ✓	Answer 1 (1)
3.5.3	8 boys preferred traditional dress ✓	Answer 1 (1)
3.5.4	Girls who preferred casual dress = total – boys who preferred casual dress ✓ = 23 – 15 ✓ = 8 ✓	Method 1 Answer 1 (2)
3.5.5	Total number of respondents = 32 + 23 + 24 ✓ ✓ = 79 ✓	Concept 1 Readings 1 Answer 1 (3)
3.5.6	The matriculants eventually chose formal clothes ✓ (any suitable acceptable answer)	Answer 1 (1)
		[30]

QUESTION 4 [18]		
4.1.1	<p>Area of netball court $= 15,25 \text{ m} \times 30,5 \text{ m} \checkmark$ $= 465,125 \text{ m}^2 \checkmark$</p>	<p>Substitution 1 Multiplication 1 (2)</p>
4.1.2	<p>$500 \text{ mm} = 0,5 \text{ m} \checkmark$</p>	<p>Conversion 1 (1)</p>
4.1.3	<p>Area $= 1 \text{ m} \times 0,5 \text{ m} \checkmark$ $= 0,5 \text{ m}^2 \checkmark$</p>	<p>Multiplication 1 Answer 1 (2)</p>
4.1.4	<p>METHOD 1 \checkmark (When length of grass strip is laid along the length of court) There will be : 31 strips along the length of court and 31 strips along the breadth.</p> <p>So the number of strips $= 31 \times 31 \checkmark$ $= 961 \text{ strips} \checkmark$</p> <p>METHOD 2 (When length of grass strip is laid along the breadth of court) There will be 61 strips along the length of court and \checkmark 16 strips along the breadth of the court</p> <p>So the number of strips $= 61 \times 16 \checkmark$ $= 976 \text{ strips} \checkmark$</p> <p>METHOD 3</p> <p>Number of rectangles $= \frac{\text{area of court}}{\text{area of 1 grass recangle}} \checkmark$</p> $= \frac{465,125}{0,5}$ $= 930,25 \checkmark$ $= 931 \text{ grass rectangles} \checkmark$	<p>Number of strips Multiplication answer</p> <p>Number of strips Multiplication answer</p> <p>Division 1</p> <p>Answer 1 Rounding off correctly 1 (3)</p>

<p>4.2</p>	<p>METHOD 1 In 5 hrs we need 4 workers In 1 hr we need $4 \times 5 = 20$ workers So, in 2,5 hr we will need $\frac{20}{2,5}$ ✓ $= 8$ workers ✓</p> <p>METHOD 2 In 5 hrs work is done by 4 workers ✓ In half the time, double the number of workers are needed So 8 workers will be needed. ✓</p>	<p>Method 1 Answer 1 Method 1 Answer 1 (2)</p>
<p>4.3.1</p>	<p>No. of nets = 3 ✓</p>	<p>Answer 1 (1)</p>
<p>4.3.2</p>	<p>Total cost of nets = $3 \times R 24,80$ ✓ $= R74,40$ ✓</p>	<p>Multiplication 1 Answer 1 (2)</p>
<p>4.4</p>	<p>METHOD 1 $5 \ell = 2 \ell + 2 \ell + 1 \ell$ So the area covered by the paint $= 3 \text{ m}^2 + 3 \text{ m}^2 + 1,5 \text{ m}^2$ ✓ $= 7,5 \text{ m}^2$ ✓</p> <p>METHOD 2 5 ℓ covers = (5 × what 1 ℓ covers) ✓ $= 5 \times 1,5 \text{ m}^2$ $= 7,5 \text{ m}^2$ ✓</p>	<p>METHOD 1 Addition 1 Answer 1 METHOD 2 Multiplication 1 Answer 1 (2)</p>
<p>4.5</p>	<p>$i = \frac{17}{100} = 0,17$ ✓</p> <p>S.I. = $P \times n \times i$ $= R11\ 000 \times 5 \times 0,17$ ✓ $= R9\ 350$ ✓</p>	<p>Conversion of i 1 Subst 1 Answer 1 (3)</p>
		<p>[18]</p>

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QUESTION 5 [18]		
5.1.1	Plastic bags were mostly re-used at home ✓	Answer 1 (1)
5.1.2	Aluminium cans were mostly sent to a central collection point ✓	Answer 1 (1)
5.2	Percentage of the households who recycled glass $= \frac{\text{no of households recycling glass}}{\text{no of households in Southern Australia}} \times 100\% \quad \checkmark$ $= \frac{581\,000}{640\,500} \times 100\% \quad \checkmark$ $= 90,710\,382\,51\% \quad \checkmark$ $\approx 90,7\% \quad \checkmark$	Concept Substitution 1 Answer 1 Rounding 1 (4)
5.3	Length of time able to play one TV $= 20 \times 3 \text{ hrs} \quad \checkmark$ $= 60 \text{ hrs} \quad \checkmark$ OR $20 \text{ TV's can play for three hours each} \quad \checkmark$	Multiplication 1 Answer 1 (2)
5.4.1	Chart A illustrates the recycling of glass ✓ ✓	Answer 2 (2)
5.4.2	Chart B illustrates the recycling of motor-oil ✓ ✓	Answer 2 (2)
5.5.1	Paper recycled : Paper consumed $= 935\,000 : 2\,144\,000 \text{ or } 935 : 2\,144$	Concept 1 Answer 1 (2)
5.5.2	One ton of paper is equivalent to 17 trees 935 000 tons of paper is equivalent to $17 \times 935\,000$ trees ✓ $= 15\,895\,000 \text{ trees} \quad \checkmark$	Multiplication 1 Answer 1 (2)
5.5.3	Paper to recycle in 2010 = $\frac{43}{100} \times 2\,144\,000$ ✓ $= 921\,920 \text{ tons} \quad \checkmark$	Substitution 1 Answer 1 (2)
		[18]

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QUESTION 6 [15]		
6.1	$2\ 000\ 000\ \text{cm}^3 = 2\ 000\ 000\ \text{ml}$ $= 2\ 000\ \ell \quad \checkmark$ $= 2\ \text{k}\ell$	Answer 1 (1)
6.2	Length = 128 cm Breadth = 125 cm \checkmark Height = 125 cm	Answer 1 (1)
6.3.1	Area of base = length \times breadth $= 160\text{cm} \times 100\text{cm} \quad \checkmark$ $= 16\ 000\ \text{cm}^2 \quad \checkmark$	Subst 1 Answer 1 (2)
6.3.2	Surface area = $2 \times (\text{length} \times \text{breadth} + \text{length} \times \text{height} + \text{breadth} \times \text{height})$ $= 2(160 \times 156,25 + 160 \times 80 + 156,25 \times 80)$ $= 2(50\ 300\ \text{cm}^2) \quad \checkmark \quad \checkmark$ $= 100\ 600\ \text{cm}^2 \quad \checkmark$	Substitution 1 Working out 1 Answer 1 (3)
6.3.3	Volume = length \times breadth \times height $2\ 000\ 000 = 200 \times B \times 80 \quad \checkmark$ $2\ 000\ 000 = B \times 16\ 000 \quad \checkmark$ So $B = \frac{2\ 000\ 000}{16\ 000} = 125\ \text{cm} \quad \checkmark$	Substitution 1 Working out 1 Answer 1 (3)
6.3.1	$95\ 250\ \text{cm}^2 = 9,525\ \text{m}^2 \quad \checkmark$ Construction costs = R120 per $\text{m}^2 \times 9,525\ \text{m}^2 \checkmark$ $= \text{R}1\ 143 \quad \checkmark$	Conversion Multiplication 1 Answer 1 (3)
6.3.2.	cost per m^2 excluding VAT = $\frac{\text{R}120\ \text{per}\ \text{m}^2}{114\%}$ $= \frac{120}{114} \times \frac{100}{1}$ $= \text{R}105,26 \quad \checkmark$	Method 1 Answer 1 (2)
		[15]

QUESTION 7 [26]		
7.1.1	Johannesburg [✓] has a higher annual rainfall than Cape Town	1 Answer (1)
7.1.2	Range = highest [✓] – lowest [✓] = 125 mm – 4 mm = 121 mm [✓]	1 highest 1 lowest 1 Answer (3)
7.1.3	Johannesburg [✓] has mainly summer rainfall	Answer 1 (1)
7.1.4	June [✓] and July [✓] have rainfall greater than 80mm	1 Answer 1 Answer (2)
7.1.5	There is a decrease ^{✓✓} (gets less) in the amount of rainfall from January to April.	2 Answer (2)
7.1.6	Average number of days = $\frac{104✓ days per month✓$	1 Method 1 Answer 1 rounding off (3)
7.2.1	The grid reference for Cape Town is E2 [✓]	Answer 1 (1)
7.2.2	Towns shown on the map as being on the N1 are Paarl, Worcester, Beaufort West [✓] , Bloemfontein [✓] , and Kroonstad	Any two 2 (2)
7.2.3	The general direction from Cape Town to Nelspruit is North-East [✓] (also accept north or east)	Answer 1 (1)

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7.2.4	Distance between Cape Town and Johannesburg $= 80 \times 16\,000\,000 \text{ mm} \checkmark$ $= 1\,280\,000\,000 \text{ mm} \checkmark$ $= 1\,280\,000 \text{ m}$ $= 1\,280 \text{ km} \checkmark$	Multiplication 1 Answer 1 Answer 1 (3)
7.2.5	To travel to Johannesburg via Kimberley they would travel on the N1, and then on the N12.	Answer 2 (2)
7.2.6	Kimberley is to the right of Bloemfontein Or to the west of Bloemfontein (also accept any other suitable explanation.)	Answer 1 (1)
7.2.7a	From the distance table, the distance between Cape Town and Bloemfontein = 996 km ✓	Answer 1 (1)
7.2.7b	Distance = speed \times time $417 \text{ km} = \text{speed} \times 4,5 \text{ hr} \checkmark$ $\text{Speed} = \frac{417 \text{ km}}{4,5 \text{ hr}}$ $= 92,666 \text{ km/hr} \checkmark$ $= 93 \text{ km/hr} \checkmark$	Substitution 1 Answer 1 Rounding off 1 (3)
		[26]