



education

Department:
Education
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

MATHEMATICAL LITERACY P1 PREPARATORY EXAMINATIONS 2008 MEMORANDUM

MARKS: 150

TYD: 3 hours

This memorandum consists of 6 pages.

Symbol	Explanation
M	Method
MA	Method with Accuracy
CA	Consistent Accuracy
A	Accuracy (Answer)
C	Conversion
S	Simplification
RT / RG / RM	Reading from table / Reading from graph / Reading from map
F	Choosing the correct formula
SF	Substitution in formula
O	Opinion
P	Penalty e.g. for no units, incorrect rounding, etc
R	Rounding off / Reason

No	AS	Calculations/Workings	Marks/Comments
1.1.1	1.1	$325 - 36,3 \div 0,3 = 325 - 121 \checkmark$ $= 204 \checkmark$	M: 1 A: 1
1.1.2	1.1	$7,5\% \text{ of R}499 = 0,075 \times \text{R}499 \checkmark$ $= \text{R}37,43 \checkmark$	M: 1 for 0,075 A: 1 for answer correctly rounded off
1.1.3	1.1	$\frac{4}{5} \text{ of } 250 \text{ learners} = 200 \text{ learners} \checkmark$	A: 1
1.2.1		$\frac{11}{20} \times 100\% \checkmark$ $= 55\% \checkmark$	M: 1 A: 1
1.2.2	3.2	$2,5\text{km} = 2\,500\text{m} \checkmark$	C: 1
1.2.3	1.1	$\text{R}128 \times 0,95 \checkmark \checkmark = \text{R}121,60 \checkmark$ OR $0,05 \times \text{R}128 = \text{R}6,40 \checkmark$ $\text{R}128 - \text{R}6,40 \checkmark = \text{R}121,60 \checkmark$	M: 2 A: 1
1.2.4	1.1	$2\text{kg}:0,4\text{kg} = 2\,000\text{g} : 400\text{g} \checkmark$ $= 5 : 1 \checkmark$	M: 1 A: 1
1.3.1	3.1	Perimeter $= 2 \times (l + b)$ $= 2(5,2\text{m} + 3,8\text{m}) \checkmark$ $= 18\text{m} \checkmark$	SF: 1 A: 1
1.3.2	3.1	Area $= l \times b$ $= 5,2\text{m} \times 3,8\text{m} \checkmark$ $= 19,76\text{m}^2 \checkmark$	SF: 1 A: 1
1.3.3	3.1	Volume of concrete $= l \times b \times h$ $= 5,2\text{m} \times 3,8\text{m} \times 0,05\text{m} \checkmark \checkmark$ $= 0,988\text{m}^3$ $\approx 1\text{m}^3 \checkmark$	SF: 1 C: 1 A: 1
1.4.1	3.1	3m	A: 1
1.4.2		$A = \pi r^2 = 3,14 \times (1,5\text{m})^2 \checkmark$ $= 7,065\text{m}^2 \checkmark$ $\approx 7,07\text{m}^2 \checkmark$	SF: 1 M: 1 A: 1

1.4.3	3.1	Circumference = $2 \times \pi \times r$ = $2 \times 3,14 \times 1,5$ ✓✓ = 9,42m ✓	SF: 1 M: 1 A: 1
1.5.1	4.2	10 boys ✓	RG: 1
1.5.2	4.2	38 learners ✓	RG: 1
1.5.3	4.2	$38 - 18$ ✓✓ = 20 girls ✓	RG: 1 M: 1 A: 1
1.5.4	4.5	$P(\text{Boy}) = \frac{48}{84}$ ✓✓ = $\frac{3}{7}$ ✓	M: 2 (1 for numerator, 1 for denominator) A: 1
			Total q 1: 35
2.1.1	2.3	50 Minutes ✓	RG: 1
2.1.2	2.3	10 km ✓	RG: 1
2.1.3	2.3	15 minutes ✓	RG: 1
2.1.4	2.3	15 km ✓	RG: 1
2.1.5	2.3	$35 \text{ min} - 25 \text{ min}$ ✓ = 10 min ✓	M: 1 A: 1
2.1.6a	3.2	$\frac{15}{60}$ ✓ = 0,25 ✓	M: 1 A: 1
2.1.6b	2.3 2.1	Average speed = $\frac{15 \text{ km}}{0.25 \text{ h}}$ ✓✓ = 60 km/h ✓	SF: 2 A: 1
2.2.1	3.2	$4 \times 30 \text{ g}$ = 120g	M: 1 A: 1
2.2.2	3.2	$560 \text{ ml} \div 2$ ✓ = 280 ml ✓	M: 1 A: 1
2.2.3	2.1	Temperature in °C = (Temperature in °F - 32°) $\times \frac{5}{9}$ = $(440 - 32) \times \frac{5}{9}$ ✓ = 226,6666... ✓ $\approx 230^\circ\text{C}$ ✓	SF: 1 A: 1 R: 1
2.2.4	1.3	$60 \times \text{R}2,50$ ✓ = R150 ✓	M: 1 A: 1
2.2.5	1.3	$\text{R}90 \div \text{R}2,50/\text{pancake}$ ✓ 36 pancakes ✓	M: 1 A: 1
			Total q 2: 22
3.1.1a	2.3	$4 \times \text{R}12$ ✓ = R48 ✓	M: 1 A: 1
3.1.1b	2.3	$84 \div 12$ ✓ = 7 hours ✓	M: 1 A: 1
3.1.2	2.3	Pay = $\text{R}24 + (\text{hours worked} \times \text{R}6)$ = $\text{R}24 + 4 \times \text{R}6$ ✓ = R48 ✓ OR Pay = R48 (by looking at pattern in table) ✓✓	M: 1 A: 1 OR RT: 2

3.1.3	2.1	Pay = R24 + (hours worked × R6) 78 = 24 + 6 × h ✓ 54 = 6 × h ✓ h = 9hours ✓ OR: by extending the table <table><tr><td>Hours worked</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td></tr><tr><td>Pay in Rand</td><td>54</td><td>60</td><td>66</td><td>72</td><td>78</td></tr></table> OR: Answer only: ✓ ✓✓ ✓	Hours worked	5	6	7	8	9	Pay in Rand	54	60	66	72	78	SF: 1 M: 1 A: 1 OR M: 2 A: 1 OR A: 4
Hours worked	5	6	7	8	9										
Pay in Rand	54	60	66	72	78										
3.1.4	2.3	Jo ✓✓	RT: 2												
3.1.5 3.1.6	2.2		For 3.1.5: 1 for y-intercept of 0 2 for any two other points, e.g. (1;12) and (5;60) 1 for label For 3.1.6: 1 for y-intercept of 24 2 for any two other points, e.g. (1;30) and (6;60) 1 for label												
3.2	1.3	€1 = R9,93 €5 = R9,93 × 5 = R49,65 ✓ ≈ R50 ✓	A: 1 R: 1												
			Total q 3: 21												
4.1.1	1.3 4.2	Pythons: R54 000 ✓	RG: 1												
4.1.2	4.2	45% ✓	RG: 1												
4.1.3	1.3 4.2	100% - (45% + 11% + 14%) ✓ = 30% ✓	M: 1 A: 1												
4.1.4	1.1 1.3 4.2	33% of R54 000 = 0,33 × R54 000 ✓ = R17 820 ✓	M: 1 A: 1												
4.1.5	1.1	100 × R450 ✓ = R45 000 ✓	M: 1 A: 1												

4.1.6	1.1	$1,06 \times R450 \checkmark\checkmark$ $= R477 \checkmark$ OR: $0,06 \times R450 \checkmark$ $= R27 \checkmark$ $R450 + R27 = R477 \checkmark$	M: 2 A: 1
4.1.7	1.3	$R42\ 000 - R35\ 000 \checkmark$ $= R7\ 000 \checkmark$	M: 1 A: 1
4.2.1	1.3	$R8\ 000 \checkmark$	RT: 1
4.2.2	1.3	$R356 \checkmark\checkmark$	RT: 2
4.2.3	1.3	No. $\checkmark$ One must earn at least R2 200 per month. $\checkmark$	A: 1 R: 1
4.2.4	1.3	$12 \times R355 \checkmark\checkmark$ $= R4\ 260 \checkmark$	RT (355): 1 M: 1 A: 1
4.3	1.2	Simple Interest = $P \times n \times r$ $= R3\ 000 \times 1 \times 0,18 \checkmark\checkmark$ $= R540 \checkmark$	SF: 2 A: 1
			Total q 4: 24
5.1.1	3.1	Volume cylinder = $\pi r^2 \times h$ $= 3,14 \times (0,4)^2 \times 1,2 \checkmark$ $= 0,60288\text{m}^3 \checkmark$ $\approx 0,6\text{m}^3 \checkmark$	SF: 1 M: 1 A: 1
5.1.2	3.2	$768\ 000\text{cm}^3 = 768\ \text{litre} \checkmark$	C: 1
5.1.3	3.2	1 litre = 0,22 gallon 768 litre = $768 \times 0,22 \checkmark$ $= 168,96\ \text{gallon} \checkmark$	M: 1 A: 1
5.1.4	3.1	Surface Area cylinder = $2\pi r(h+r)$ $= 2 \times 3,14 \times 0,4(1,2 + 0,4) \checkmark\checkmark$ $= 2 \times 3,14 \times 0,4 \times 1,6$ $= 4,0192 \checkmark$ $\approx 4,02\text{m}^2 \checkmark$	SF: 1 M: 1 A: 1 R: 1
5.1.5	1.1 3.1	$5 \times 1,25\text{m}^2 \checkmark$ $= 6,25\text{m}^2 \checkmark$	M: 1 A: 1
5.2.1	3.4	A3 $\checkmark$	RM: 1
5.2.2	3.4	Bree Street $\checkmark$	RM: 1
5.2.3	3.3	$5\text{cm} \times 16\ 000 \checkmark$ $= 80\ 000\text{cm} \checkmark$ $= 800\text{m} \checkmark$	M: 1 A: 1 C: 1
5.2.4	3.4	West $\checkmark$	RM: 1
5.3.1	2.1 1.1	Cost = $R250 \times n + R15\ 000$ $= R250 \times 80 + R15\ 000 \checkmark\checkmark$ $= R35\ 000 \checkmark$	SF: 1 M: 1 A: 1
5.3.2	2.1 1.1	Cost = $R250 \times n + R15\ 000$ $31\ 000 = 250n + 15\ 000 \checkmark$ $16\ 000 = 250n \checkmark$ $n = 64 \checkmark$	SF: 1 M: 1 A: 1
			Total q 5: 24

6.1.1	4.3	24 ✓	A: 1
6.1.2	4.3	24 ✓	A: 1
6.1.3	4.3	17 26 28 35 37 39 40 43 55 56 ✓✓	A: 2
6.1.4	4.3	56 – 17 ✓ = 39 ✓	M: 1 A: 1
6.1.5	4.3	(17+26+28+35+37+39+40+43+55+56) ÷ 10 ✓ = 376 ÷ 10 ✓ = 37,6 ✓	M: 1 A: 1 A: 1
6.2.1	4.4	634	RT: 1
6.2.2	4.4	7+6+6+9+5+4+2+5+6 ✓ = 50 ✓	M: 1 A: 1
6.2.3	4.3	696 – 35 ✓ = 661 ✓	M: 1 A: 1
6.2.4	1.1 4.4	0,885 × 4 899 ✓✓ = 4 335,615 ≈ 4 336 ✓ OR: 0,115 × 4 899 = 563 ✓ 4 899 - 563 ✓ = 4 336 ✓	M: 2 A: 1
6.2.5	1.1 4.4	$\frac{7}{272} \times 100\%$ ✓✓ = 2,57% ✓	M: 2 A: 1
6.2.6	1.1 4.4	560 : 5 ✓ = 112 : 1 ✓	RT: 1 A: 1
6.2.7	4.3	4 899 ÷ 12 ✓ = 408,25 ≈ 408 ✓	M: 1 A: 1
			Total q 6: 24
		TOTAL	150