basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

MATHEMATICAL LITERACY P2

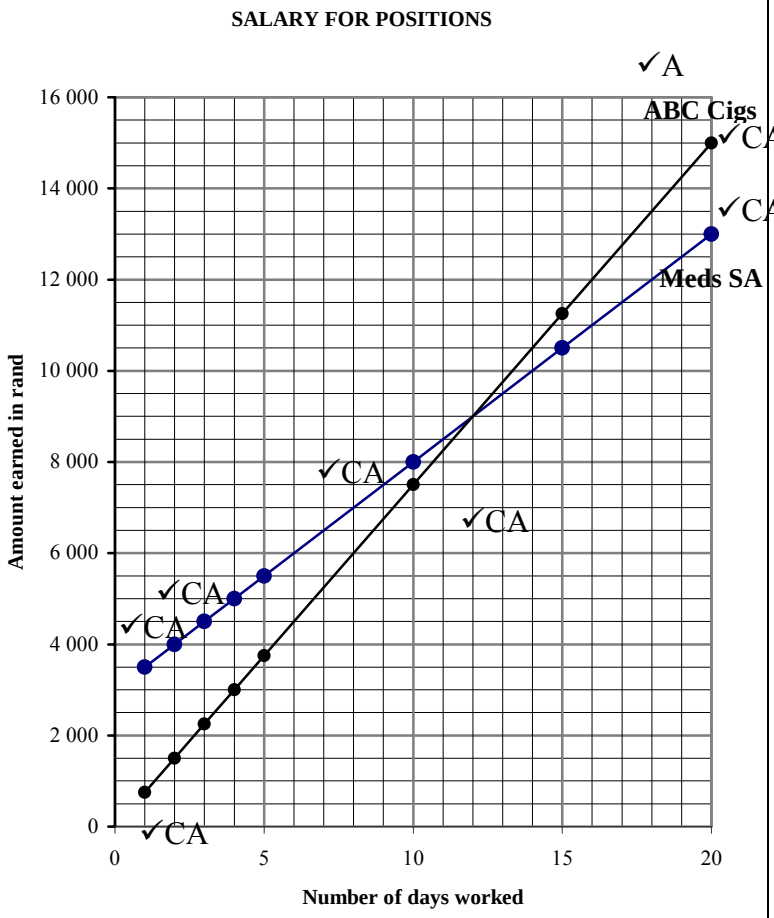
NOVEMBER 2011

MEMORANDUM

MARKS: 150

SYMBOL	EXPLANATION
A	Accuracy
CA	Consistent accuracy
C	Conversion
J	Justification (Reason/Opinion)
M	Method
MA	Method with accuracy
P	Penalty, e.g. for no units, incorrect rounding off, etc.
R	Rounding off
RT/RG	Reading from a table/Reading from a graph
S	Simplification
SF	Correct substitution in a formula
O	Own opinion/Example

This memorandum consists of 20 pages.

QUESTION 1 [30 MARKS]			
Ques	**Solution**	**Explanation**	**AS**
1.1.1	✓A ✓A Salary = R750 × number of days worked **OR** ✓A ✓A Salary = R750 × *n*, where *n* is the number of days worked **OR** ✓A ✓A Salary = R750*n*, where *n* is the number of days worked	1A R750 1A multiplying by number of working days **(Max 1 mark if NOT one term. No penalty if rand symbol left out)** (2)	12.2.1
1.1.2		SA Meds graph: 1CA (1;3 500) plotted correctly 1CA (2; 4 000) or any other correct point plotted correctly 1CA (20; 13 000) 1CA joining points 1A correct label for either graph ABC Cigs graph: 1CA (1; 750) 1CA (20; 15 000) 1CA joining points **Penalty 1 mark if Y-axis is joined** (8)	12.2.2
1.1.3(a)	12 days✓✓RG	2 RG reading from graph plotted (2)	12.2.3

Ques	Solution	Explanation	AS
1.1.3(b)	16 days ✓✓RG **OR** Salary (Meds) = R3 000 + R500 × 18 = R12 000 ✓M ∴ R750 × number of days worked = R12 000 Number of days = 16 ✓A	2RG reading from graph plotted 1M calculating salary 1A number of days (2)	12.2.3
1.2.1	✓A Total extra distance travelled = 20 × 2 × 40 km ✓M = 1 600 km ✓A Extra petrol needed = 1 600 km × 7,5 ℓ ÷ 100 km ✓M = 120 ℓ ✓CA Extra cost = petrol cost + maintenance cost ✓M = 120 ℓ × R9,82 + 1 600 × R0,70 ✓CA = R1 178,40 + R1 120,00 = R2 298,40 ✓CA **OR** Extra cost per single trip ✓M = 40 km × 7,5 ℓ ÷ 100 km × R9,82/ ℓ ✓A = R29,46 ✓A ✓A Extra maintenance cost per single trip = 40 km × R0,70/km = R28,00 ✓A Total extra cost per single trip = R29,46 + R28,00 = R57,46 ✓CA ✓A Total extra cost for 2 trips = 2 × 20 × R57,46 = R2 298,40 ✓CA **OR**	1A number of days and trips 1M extra distance/trip 1A total distance **Penalty 2 marks if one way distance calculated** 1M multiplying and dividing 1CA extra petrol needed 1M petrol cost 1CA maintenance cost 1CA simplification 1M multiplying and dividing 1A using petrol cost 1A extra petrol cost 1A using maintenance cost 1A extra maintenance cost 1CA cost per single trip 1A number of days and trips 1CA simplification	12.2.1 12.1.1

Ques	Solution	Explanation	AS
	OR Extra cost ✓A ✓M ✓M ✓A ✓A = (20 × 2 × 40 km) × 7,5 ℓ ÷ 100 km × R9,82 ✓A ✓A + (20 × 2 × 40 km) × R0,70 = R2 298,40 ✓CA	1A number of days and trips 1M extra distance/trip 1M multiplying and dividing 1A petrol needed 1A petrol cost 1A distance maintenance cost 1A maintenance cost 1CA simplification **Answer only full marks** (8)	
1.2.2	He should accept the job at Meds SA. ✓CA ✓CA He will earn R2 000 more per month at ABC Cigs, but will have to pay R2 298,40 more per month for travel. ✓✓J **OR** ✓CA ✓CA He must choose Meds SA because he earns R298,40 more ✓✓J	1CA choice 1CA difference in salary 2J justification (4)	12.4.4
1.2.3	✓✓J The manager is generalizing results from a misleading graph. ✓J ✓J The graph provides **no time comparison** and thus there **is no annual decrease** in the number of deaths due to cigarette smoking. **OR** ✓✓J The manager is generalizing results from a misleading graph. The graph shows **the percentage of deaths** per type of disease arranged in a **descending order** and thus does not show a decrease in the number of annual deaths due to cigarette smoking. ✓✓J	2J justification 2J justification 2J justification 2J justification (4)	12.4.6

QUESTION 2 [23MARKS]			
Ques	**Solution**	**Explanation**	**AS**
2.1.1	Gail's rate $= \frac{R750}{3{,}75\text{ hours}}$ ✓RT ✓M $= R200{,}00$ per hour ✓A TBOS' rate $= \frac{R400}{2{,}5\text{ hours}}$ $= R160$ per hour ✓A Dong's rate $= \frac{R700}{3{,}5\text{ hours}}$ $= R200$ per hour ✓A ∴ Her statement is incorrect ✓CA **OR** Gail's cost for 3,75 hours = R750,00 ✓A TBOS' cost for 3,75 hours $= \frac{R400}{2{,}5\text{ hours}} \times 3{,}75\text{ hours}$ ✓M ✓A $= R600{,}00$ ✓CA Dongs cost for 3,5 hours = R700,00 ✓A ∴ Her statement is incorrect ✓CA	1RT reading from the table 1M finding the rate 1A Gail's rate 1A TBOS' rate 1A Dong's rate 1CA conclusion **(Accept a similar statement)** 1A Gail's rate 1M dividing 1A correct values 1CA TBOS' rate 1A Dong's rate 1CA conclusion **maximum 2 marks if only a correct conclusion is made without calculations** (6)	12.1.1 12.1.3

Ques	Solution	Explanation	AS
2.1.2	Total excluding VAT × 114% = R9 497,93 Total excluding VAT = $\frac{\text{R9 497,93}}{114\%}$ ✓M ✓A = R 8 331,52 ✓A Total cost of parts and labour from table = R6 599,53 + R1 600,00 = R 8 199,53 ✓A ∴ Cost of Sundries and consumables = R8 331,52 – R8 199,53 ✓M = R131,99 ✓CA **OR** Total costs including VAT = R9 497,93 Labour and Spares excluding VAT = R6 599,53 + R1 600,00 = R8 199,53 ✓A Labour and Spares including VAT = R8 199,53 × 1,14 ✓M = R9 347,46 ✓A Sundries and Consumables including VAT = R9 497,93 – R9 347,46 = R150,47 ✓CA Sundries and Consumables excluding VAT = $\frac{\text{R150,47}}{114\%}$ ✓M = R131,99 ✓CA	1M division 1A percentage including VAT 1A total excl VAT 1A total cost 1M subtracting 1CA simplification 1A total cost 1M including VAT 1A amount including VAT 1CA amount including VAT 1M division by 114% 1CA simplification (6)	12.1.1

Ques	Solution	Explanation	AS
2.2.1	Graph Y ✓A We know this because Graph Y passes through the point (2,5 ; 400) **OR** (1; 160) ✓RG **OR** explanation in words	1A identifying correct graph 1RG any correct point used in explanation (2)	12.2.3
2.2.2	Graph X: for R640 time taken is 3,2 hours, ✓RG Graph Y: for R640 time taken is 4 hours ✓RG Difference in time = 4 hours – 3,2 hours ✓M = 0,8 hours ✓CA = 0,8 × 60 minutes = 48 minutes ✓C **OR** ✓M ✓C Difference in time = 4 × 60 minutes – 3,2 × 60 minutes = 240 minutes – 192 minutes = 48 minutes ✓CA	1RG reading correct time from the graph **(Accept 3,15 to 3,25)** 1RG reading correct time from the graph **(Accept 3,95 to 4,05)** 1M subtraction 1CA difference in hours **(Accept 0,7 to 0,9)** 1C converting to minutes **(Accept 42 minutes to 54 minutes)** 1M subtraction 1C converting to minutes 1CA difference in minutes (5)	12.2.3
2.3.1	Because TBO's will repair the tailgate.✓J **OR** Because TBO's is not replacing it.✓J **OR** Because TBO's will take longer✓J	1J justification (1)	12.4.5
2.3.2	Gail's Panelbeaters ✓A Their final quotation is much lower. ✓J ✓J	1A choice 2J justification (3)	12.4.5

QUESTION 3 [27 MARKS]			
Ques	**Solution**	**Explanation**	**AS**
3.1.1 (a)	4,0 cm ✓✓A	2A measurement **(Accept from 3,7 cm to 4,3 cm)** **Maximum 1 mark if answer in mm** (2)	12.3.2 12.3.3
3.1.1(b)	✓M ✓A 2 cm represent 300 km ✓M ✓CA ✓CA ∴ 4,0 cm represent (300 + 300) km = 600 km **OR** ✓M 2 cm represent 300 km ✓A 2 cm represent 30 000 000 cm ∴ the scale is 1: 15 000 000 ✓CA Actual distance = 4,0 cm × 15 000 000 = 60 000 000 cm ✓M = 600 km ✓C **OR** ✓M ✓A 2 cm represents 300 km ✓CA 4,0 cm represents $\frac{300\,km \times 4,0\,cm}{2\,cm}$ ✓CA = 600 km ✓CA **OR**	1M measuring 1A scale 1M adding the correct scale values 1CA using correct values 1CA simplification 1M measuring 1 A scale 1CA ratio 1M multiplying 1C conversion 1M measuring 1A scale 1CA multiplying 1CA dividing 1CA solution **(Accept 555 km to 645 km)** **If 1,8 cm = 300 km distance will be 666,67 km, then accept 616,67 km to 716,67 km**	12.3.2 12.3.3

Ques	Solution	Explanation	AS
3.1.1(b)	✓M ✓A 0,8 cm represent 100 km There are 5 (0,8cm) in 4 cm ✓M ✓CA ∴ 4,0 cm represent (100 + 100+ 100 + 100 + 100) km = 500 km ✓CA **OR** ✓M 0,8 cm represent 100 km ✓A 0,8 cm represent 10 000 000 cm ∴ the scale is 1: 125 000 000 ✓CA Actual distance = 4,0 cm × 125 000 000 = 500 000 000 cm ✓M = 500 km ✓C **OR** ✓A ✓M 0,8 cm : 100 km = 4 : x ✓CA $x = \frac{100\,\text{km} \times 4{,}0\,\text{cm}}{0{,}8\,\text{cm}}$ ✓CA = 500 km ✓CA	1M measuring 1A scale 1M adding the correct scale values 1CA using correct values 1CA simplification 1M measuring 1 A scale 1CA ratio 1M multiplying 1C conversion 1A scale 1M proportion 1CA multiplying 1CA dividing 1CA solution **(Accept 462,5 km to 537,5 km)** (5)	12.3.2 12.3.3

Ques	Solution	Explanation	AS
3.1.2	600 km = 110 km/h × Time Time = $\frac{600\,km}{110\,km/h}$ ✓M = 5,4545..... hours ✓CA ≈ 5,45 hours Arrival time is 13:42 ✓CA They will arrive before 14:30 ✓CA **OR** Time = $\frac{600\,km}{110\,km/h}$ ✓M = 5,4545..... hours ✓CA ≈ 5,45 hours From 08:15 to 14:30 = 6 h 15 min = 6,25 hours ✓CA They will arrive before 14:30 ✓CA **OR** Time from 08:15 to 14:30 = 6 h 15 min = 6,25 hours ✓A Distance travelled = 110 km/h × Time = 110 km/h × 6,25 hours ✓M = 687,5 km ✓CA This distance is greater than the distance between Pietermaritzburg and Johannesburg. They will arrive before 14:30 ✓CA **OR** Time from 08:15 to 14:30 = 6 h 15 min = 6,25 hours ✓A Required speed = $\frac{600\,km}{6,25h}$ ✓M = 96 km/h ✓CA He will arrive before 14:30 because he is travelling faster than the required speed. ✓CA	1M division 1CA time taken (Accept 4,95 to 5,86 and arrival time 13:18 to 14:07) 1CA arrival time 1CA reflection 1M division 1CA solution (Accept 4,95 to 5,86 and arrival time 13:18 to 14:07) 1CA calculating time 1CA reflection 1A calculating time 1M multiplying 1CA calculating distance 1CA reflection 1A calculating time 1M dividing 1CA calculating speed 1CA reflection (4)	12.2.1

Ques	Solution	Explanation	AS
3.1.3(a)	Amount of fuel bought × R10,12 per litre = R 455,40 Amount of fuel bought = $\frac{\text{R } 455,40}{\text{R } 10,12 \text{ per litre}}$ ✓M ✓A = 45 litres ✓CA Fuel left in the tank = 60 ℓ – 45 ℓ ✓M = 15 ℓ ✓CA The gauge was NOT working correctly. ✓CA **OR** Tank capacity = 60 ℓ Half-filled tank = 30 ℓ ✓M Cost to fill half-filled tank = 30 ℓ ✓A × R10,12 per litre ✓M = R 303,60 ✓CA The gauge was NOT working correctly. ✓CA **OR** Full tank = 60 ℓ Cost to fill a full tank = 60 ℓ × R10,12 per litre ✓M = R 607,20 ✓A Cost of fuel left in tank before filling = R607,20 – R455,40 = R151,80 ✓CA Petrol in tank before filling = $\frac{\text{R}151,80}{\text{R}10,12 \text{ per } \ell}$ ✓M = 15 ℓ ✓CA The gauge was NOT working correctly. ✓CA	1M division 1A using correct values 1CA petrol filled 1M subtracting 1CA petrol before filling 1CA decision 1M division 1A using correct values 1M multiplying 1A petrol cost 1CA simplification 1CA decision 1M multiplying 1A correct value 1CA subtraction 1M division 1CA simplification 1CA decision (6)	12.1.1 12.3.2

Ques	Solution	Explanation	AS
3.1.3(b)	They used 9 ℓ to cover 100 km 1 ℓ to cover $\frac{100}{9}$ km 45 ℓ to cover $\frac{100}{9} \times 45$ km ✓M = 500 km ✓CA Distance from Johannesburg = 600 km – 500 km = 100 km ✓CA **OR** Distance travelled × petrol consumption = number of litres used Distance travelled = $\frac{45\,\ell}{9\,\ell \text{ per } 100\,\text{km}}$ ✓M = 500 km ✓CA Distance from Johannesburg = 600 km – 500 km = 100 km ✓CA **OR** 9 ℓ : 100 km = 45 ℓ : x $x = \frac{45\,\ell \times 100\,\text{km}}{9\,\ell}$ ✓M = 500 km ✓CA Distance from Johannesburg = 600 km – 500 km = 100 km ✓CA	1M dividing by the consumption rate 1CA distance travelled 1CA solution **(Accept 55 km to 145 km)** 1M dividing by the consumption rate 1CA distance travelled 1CA simplification **(Accept 55 km to 145 km)** 1M using proportion 1CA distance travelled 1CA simplification **(Accept 55 km to 145 km)** (3)	12.3.2
3.2	• take the N2 to Durban ✓A • take the N3 to Harrismith ✓A • take N5 to Bloemfontein ✓A • take the N8 through Kimberley ✓A • take the N10 until Upington ✓A	1A route and town 1A route and town 1A route and town 1A route and town 1A route and town Port Shepstone to East London to Upington N6 N8 N10 **(max 4 marks)** Port Shepstone to East London to Upington N10 **(max 3 marks)** (5)	12.3.4
3.3	Rustenburg ✓✓A	2A destination (2)	12.3.4

QUESTION 4 [28 MARKS]			
Ques	**Solution**	**Explanation**	**AS**
4.1	South ✓A ✓A	2A direction **South West full marks** **South East 1 mark** (2)	12.3.4
4.2	✓M Area of a window = 160 cm × 130 cm **OR** 1,6 m × 1,3 m = 20 800 cm^2 = 2,08 m^2 ✓C Area of a door opening = 109% of 2,08 m^2 ✓M = 1,09 × 2,08 m^2 = 2,2672 m^2 ✓CA 2,14 m × width = 2,2672 m^2 $\text{width} = \frac{2{,}2672\,m^2}{2{,}14\,m}$ = 1,0594… ≈ 1,06 m ✓CA	1M multiplying 1C conversion 1M working with percentage 1CA area 1CA width of door opening in metres (5)	12.3.1 12.3.2

Ques	Solution	Explanation	AS
4.3.1	Area of N wall = 2,984 m × 2,4 m ✓SF = 7,1616 m^2 ✓A Area of S wall = area of N wall – area of window = 7,1616 m^2 – 2,08 m^2 ✓M = 5,0816 m^2 ✓CA Area of W wall = 3,304 × 2,4 ✓SF = 7,9296 m^2 ✓A Area of E wall = Area W wall – area of door = 7,9296 m^2 – 2,2672 m^2 ✓M = 5,6624 m^2 ✓CA Total area = (7,1616 + 5,0816 + 7,9296 + 5,6624) m^2 ✓M = 25,8352 m^2 ≈ 25,84 m^2 ✓CA **OR** Area of bedroom 2 = 2(area of W wall) + 2 (area of S wall) – area of window – area of door ✓SF ✓A ✓A ✓M ✓M = 2(3,304 m× 2,4m) + 2(2,984 m × 2,4 m) – (2,08 m^2) – (2,2672 m^2) ✓M ✓CA ✓CA ✓CA = 15,8592 m^2 + 14,3232 m^2 – 4,3472 m^2 = 25,8352 m^2 ≈ 25,84 m^2 ✓CA	1SF substitution 1A area of N wall 1M subtracting areas 1CA area of S wall 1SF substitution 1A area of W wall 1M subtracting areas 1CA area of E wall 1M adding all areas 1CA simplification 1SF substitution 1A area of N wall 1A area of W wall 1M multiplying by 2 1M subtraction 1M subtraction 3CA simplification 1CA final simplification (10)	12.3.1 12.3.2

Ques	Solution	Explanation	AS
4.3.2	Total area to be painted in both bedrooms $= 25{,}84\ m^2 + 28{,}44\ m^2$ $= 54{,}28\ m^2$ ✓CA ✓M Amount of paint required = $\frac{54{,}28\ m^2}{4\ m^2/\ell}$ **OR** $\frac{54{,}28\ m^2}{20\ m^2\ per\ tin}$ $= 13{,}57\ \ell$ ✓CA $= 2{,}714$ tins Number of $5\ \ell$ containers = $\frac{13{,}57\ \ell}{5\ \ell}$ ✓M $= 2{,}714$ $\therefore$ 3 containers are needed. ✓R Cost = R169,99 × 3 ✓CA = R509,97 Mrs Wong's estimation was INCORRECT ✓O **OR** $4\ m^2$ is covered by $1\ \ell$ of paint $1\ m^2$ is covered by $\frac{1}{4}\ell$ of paint ✓M Total area to be painted in both bedrooms $= 25{,}84\ m^2 + 28{,}44\ m^2$ $= 54{,}28\ m^2$ ✓CA $\therefore 54{,}28\ m^2$ is covered by $\frac{1}{4} \times 54{,}28\ \ell$ of paint $= 13{,}57\ \ell$ ✓CA ✓M Number of $5\ \ell$ containers = $\frac{13{,}57\ \ell}{5\ \ell}$ $= 2{,}714$ $\therefore$ 3 containers are needed. ✓R Cost = R169,99 × 3 ✓CA = R509,97 ✓O Mrs Wong's estimation was INCORRECT	1CA simplification 1M dividing 1CA simplification 1M dividing by $5\ \ell$ 1R rounding up 1CA cost 1O correct conclusion 1M dividing 1CA simplification 1CA simplification 1M dividing by $5\ \ell$ 1R rounding up 1CA cost 1O correct conclusion (7)	12.1.1 12.1.2

Ques	Solution	Explanation	AS
4.4	Total number of hours worked = $(6 + 6 \times 1\frac{1}{2})$ hours ✓M = 15 hours ✓A Total labour cost = 15 × R35,90 = R538,50 ✓CA ∴ The invoice amount was incorrect. ✓O **OR** Total labour cost = $6 \times$ R35,90 ✓M + $6 \times 1\frac{1}{2} \times$ R35,90 ✓A = R538,50 ✓CA ∴ The invoice amount was incorrect. ✓O **OR** Rate on Saturdays = R35,90 + $\frac{1}{2}$ × R35,90 = R53,85 Labour cost on Saturday = 6 × R53,85 = R323,10 ✓CA Labour cost on Friday = 6 × R35,90 = R215,40 ✓A Total payment = R323,10 + R215,40 = R538,50 ✓M ∴ The invoice amount was incorrect. ✓O	1M finding total time 1A simplification 1CA total payment 1O correct conclusion 1M finding total hour 1A simplification 1CA total payment 1O correct conclusion 1CA Sunday 1A Friday 1M adding 1O correct conclusion (4)	12.1.3 12.2.1

QUESTION 5 [42 MARKS]			
Ques	**Solution**	**Explanation**	**AS**
5.1.1	P(scoring more than 90%) $= \frac{\text{number of scores more than 90}}{\text{total number of scores}}$ $= \frac{2}{14}$ ✓A ✓M $= \frac{1}{7}$ ✓CA **OR** 0,14 **OR** 14,29%	1A number of scores more than 90) 1M probability 1CA simplifying **(value must be less than 1)** **Answer only full marks** (3)	12.4.5
5.1.2 (a)	Vuka Secondary 49; 50; 54; 57; 67; 67; 67; 78; 78; 89; 90; 90; 95; 98 ✓A **P** (Median) $= \frac{67\ \% + 78\ \%}{2}$ ✓M $= 72{,}5\%$ ✓CA **Q** (Mean) ✓M $= \frac{90+67+67+89+50+78+54+67+95+90+98+57+49+78}{14}\%$ $= \frac{1\,029}{14}\%$ ✓A $= 73{,}5\%$ ✓CA Bathini High **R** (Range) = 99 % – 59 % ✓M/A = 40% ✓A	1A Arranging 1M concept of median 1CA simplifying **Maximum 1 if data not arranged** 1M concept of mean 1A correct sum 1CA simplifying 1M/A concept 1A range **No penalty if percentage left out** **Answer only full marks** (8)	12.4.3

<table>
<tr><th>Ques</th><th>Solution</th><th>Explanation</th><th>AS</th></tr>
<tr><td>5.1.2(b)</td><td>
<table>
<tr><td></td><td>Median</td><td>Mode</td><td>Mean</td><td>Range</td></tr>
<tr><td>Bathini High</td><td>72%</td><td>67%</td><td>76,4%</td><td>40%</td></tr>
<tr><td>Vuka Secondary</td><td>72,5%</td><td>67%</td><td>73,5%</td><td>49%</td></tr>
</table>
Bathini High performed better ✓CA
Bathini High has a greater mean ✓J **OR** Vuka Secondary has a smaller mean
Bathini High a smaller range ✓J **OR** Vuka Secondary has a larger range
</td><td>1CA identifying school
1J mean
1J range
(3)</td><td>12.4.3</td></tr>
<tr><td>5.1.3(a)</td><td>The scores are 90%; 95% and 98% ✓A ✓A ✓A</td><td>1A for 90%
1A for 95%
1A for 98%
Penalty for each extra value.
No penalty for extra 90%
(3)</td><td>12.4.3</td></tr>
<tr><td>5.1.3(b)</td><td>25th percentile of Bathini High = 67% ✓A
∴ 4 learners ✓CA</td><td>1A identifying score
1CA number of learners
Answer only full marks
(2)</td><td>12.4.3</td></tr>
</table>

Ques	Solution	Explanation	AS
5.1.4(a)	✓A ✓A ✓A Lindiwe's score = (18 × 2) + (10 × 1) + (10 × 3) marks = (36 + 10 + 30) marks = 76 marks ✓CA ∴ The records were NOT correct ✓J **OR** ✓A Lindiwe lost only 2 × 12 = 24 marks ✓A Lindiwe's score = (100 – 24) marks ✓M = 76 marks ✓CA ∴ The records were NOT correct ✓J	3A correct values 1CA simplification 1J conclusion 2A calculating 1M subtraction 1CA simplification 1J conclusion **Maximum 2 marks for correct conclusion with no calculations** (5)	12.1.1
5.1.4(b)	**OPTION 1** 30 Multiple choice correct answers = 30 × 2 marks ✓M = 60 marks ✓A 10 short questions correct = 10 × 3 = 30 marks ✓A 5 one-word answers correct = 5 × 1 = 5 marks ✓A Total marks = 60 + 30 + 5 = 95 ✓A **OPTION 2** 30 Multiple choice correct answers = 30 × 2 marks ✓M = 60 marks ✓A 9 short questions correct = 9 × 3 = 27 marks ✓A 8 one-word answers correct = 8 × 1 = 8marks ✓A Total marks = 60 + 27 + 8 = 95 ✓A	1M multiplication 1A simplification 1A short questions 1A one-word 1A simplification **Learners can reason that 5 marks are lost** 1M multiplication 1A simplification 1A short questions 1A one-word 1A simplification **Learners can reason that 5 marks are lost** (5)	12.1.1 12.2.1

Ques	Solution	Explanation	AS
5.2.1	96,67% of the number of learners who passed the examination = 29 Number of learners who wrote $= \frac{29}{96,67\%}$ ✓A ✓M **OR** $= \frac{29}{96,67} \times \frac{100}{1}$ ✓M ✓A = 29,99896555… ✓A = 29,99896555… ✓A ≈ 30 ≈ 30 Number of learners who failed = 30 – 29 = 1 ✓CA **OR** ✓M ✓A 96,67 % : 29 = 3,33 %: $\frac{3,33 \times 29}{96,67}$ = 3,33 %: 1 ✓CA ✓CA Number of learners who failed = 1 **OR** method of trial – and - error	1A using correct numbers 1M division 1A 30 learners 1CA simplification 1M using ratio 1A 3,33% 1CA simplification 1CA simplification **Answer only full marks** (4)	12.1.1 12.4.4
5.2.2	Number of learners who passed = 134 ✓A P(degree pass) = $\frac{\text{number of learners with a degree pass}}{\text{total number of learners who passed}}$ ✓A ✓M = $\frac{65}{134}$ ≈ 48,5% ✓CA	1A total number of learners who passed 1A number of degree passes 1M probability 1CA percentage **(less than 100%)** to 1 decimal place (4)	12.1.1 12.4.5
5.2.3	Vuka Secondary performed better. ✓A Vuka Secondary entered 153 learners for the Matric examination and more of them obtained a **degree pass**. ✓✓J (42,48%) Vuka Secondary also had more **diploma passes** (28,8%) ✓✓J ✓A **OR** Bathini High had a higher overall percentage pass rate but they only had 30 learners who wrote the examination and only 13,33% obtained a degree pass. ✓J ✓J **OR** Any similar well thought-out reasoning.	1A correct school 2J justification 2J justification If **Bathini** is chosen **max 3 marks** (5)	12.1.1 12.4.4

TOTAL: 150