



# basic education

Department:  
Basic Education  
**REPUBLIC OF SOUTH AFRICA**

## SENIOR CERTIFICATE EXAMINATIONS *SENIORSERTIFIKAAT-EKSAMEN*

**MATHEMATICAL LITERACY P2/  
*WISKUNDIGE GELETTERDHEID V2***

**MARKING GUIDELINES/*NASIENRIGLYNE***

**2018**

**MARKS/PUNTE: 150**

<b>Symbol/Kode</b>	<b>Explanation/Verduideliking</b>
<b>M</b>	Method/ <i>Metode</i>
<b>MA</b>	Method with accuracy/ <i>Metode met akkuraatheid</i>
<b>CA</b>	Consistent accuracy/ <i>Volgehoue akkuraatheid</i>
<b>A</b>	Accuracy/ <i>Akkuraatheid</i>
<b>C</b>	Conversion/ <i>Herleiding</i>
<b>S</b>	Simplification/ <i>Vereenvoudiging</i>
<b>RT</b>	Reading from a table/a graph/document/diagram/ <i>Lees vanaf tabel/grafiek/diagram</i>
<b>SF</b>	Correct substitution in a formula/ <i>Korrekte vervanging in formule</i>
<b>O</b>	Opinion/Explanation/ <i>Opinie/Verduideliking</i>
<b>P</b>	Penalty, e.g. for no units, incorrect rounding off, etc./ <i>Penalisasie, bv. vir geen eenhede/verkeerde afronding, ens.</i>
<b>R</b>	Rounding off/ <i>Afronding</i>
<b>NPR</b>	No penalty for rounding/ <i>Geen penalisasie vir afronding nie</i>
<b>AO</b>	Answer only/ <i>Slegs antwoord</i>
<b>MCA</b>	Method with constant accuracy/ <i>Metode met volgehoue akkuraatheid</i>

**These marking guidelines consists of 15pages.  
*Hierdie nasienriglyne bestaan uit 15 bladsye.***

## NOTE:

- If a candidate answers a question TWICE, only mark the FIRST attempt.
- If a candidate has crossed out (cancelled) an attempt to a question and NOT redone the solution, mark the crossed out (cancelled) version.
- Consistent accuracy (CA) applies in ALL aspects of the marking guideline, however it stops at the second calculation error.
- If the candidate presents any extra solution when reading from a graph, table, layout plan and map, then penalise for every extra item presented.

## LET WEL:

- As 'n kandidaat 'n vraag TWEE KEER beantwoord, merk slegs die EERSTE poging.
- As 'n kandidaat 'n antwoord van 'n vraag doodtrek(kanselleer) en nie oordoen nie, merk die doodgetrekte (gekanselleerde) poging.
- Volgehoue akkuraatheid (CA) word in ALLE aspekte van die nasienriglyne toegepas, dit hou op by die tweede berekeningsfout.
- Wanneer 'n kandidaat aflesings vanaf 'n grafiek, tabel, uitlegplan en kaart geneem en ekstra antwoorde gee, penaliseer vir elke ekstra item.

QUESTION/VRAAG 1 [35 MARKS/PUNTE]			
Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
1.1.1	$A = 367 \times 3 \quad \checkmark M$ $= 1\ 101 \quad \checkmark A$ $B = 15\ 726 \div 3 \quad \checkmark M$ $= 5\ 242 \quad \checkmark A$ <p style="text-align: center;"><b>OR/OF</b></p> $A = \frac{367 \times 2\ 700}{900} \quad \checkmark M = 1\ 101 \quad \checkmark A$ $B = \frac{900 \times 15\ 726}{2\ 700} \quad \checkmark M = 5\ 242 \quad \checkmark A$	1M multiplying 1A simplification 1M dividing 1A simplification <p style="text-align: center;"><b>OR/OF</b></p> 1M working with ratio 1A simplification 1M working with ratio 1A simplification <b>AO</b> (4)	D L2
1.1.2	1 Teacher + 3 learners = 4 persons $\checkmark A$ <i>1 Onderwyser + 3 leerders = 4 persone</i> Number of schools/Aantal skole = $32\ 712 \div 4 \quad \checkmark MA$ $= 8\ 178 \quad \checkmark CA$	1A total persons 1MA dividing by 4 1CA simplification <b>AO</b> (3)	D L2
1.2.1	$\text{Median\%/Mediaan\%} = \frac{\checkmark RT \quad \checkmark RT}{2} = 60 \quad \checkmark M$ $= 60 \quad \checkmark CA$	2RT correct values 1M median concept 1CA simplification <b>AO</b> (4)	D L2
1.2.2	$\text{Mean\%/Gemiddelde\%}$ $= \frac{36 + 42 + 48 + 58 + 60 + 61 + 62 + 76 + 86}{9} \quad \checkmark MA$ $= \frac{529}{9} \approx 58,78 \quad \checkmark CA$	1MA adding correct values 1A dividing by 9 1CA simplification <b>AO</b> <b>NPR</b> (3)	D L2

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
1.2.3	<p>IQR = Upper quartile – Lower quartile  <i>IKO = Boonstekwartiel – Onderstekwartiel</i></p> <p><math>16\% = 68\% - C</math> ✓A ✓SF</p> <p><math>C = 52\%</math> ✓CA</p>	<p>1A value of Q3  1SF substituting 16% and Q3</p> <p>1CA simplification</p> <p>(3)</p>	D L3
1.2.4	<p>✓✓O  Matuli's mean is higher than Bianca's.  <i>Matuli se gemiddeld is hoër as Bianca s'n.</i></p> <p><b>OR/OF</b>  Bianca's mean is lower.  <i>Bianca se gemiddeld is laer.</i></p> <p>The range of Matuli's percentages (<math>86 - 48 = 38</math>) is smaller than Bianca's (<math>86 - 36 = 50</math>)  <i>Die omvang van Matuli se persentasies (<math>86 - 48 = 38</math>) is kleiner as Bianca s'n (<math>86 - 36 = 50</math>)</i> ✓✓O</p> <p><b>OR/OF</b>  Bianca's range is bigger.  <i>Bianca se omvang is groter.</i></p> <p><b>OR/OF</b></p> <p>The minimum Matuli scored was 48% which is better than Bianca's 36%.  <i>Die minimum persentasie wat Matuli aangeteken het was 48 wat hoër as Bianca se 36% is</i> ✓✓O</p> <p><b>OR/OF</b>  Bianca's minimum is lower than Matuli's.  <i>Bianca se minimum is laer as Matulis'n.</i></p>	<p>2O comparing mean marks</p> <p>2O comparing range <b>or</b> minimum marks</p> <p>(4)</p>	D L4
1.3.1	<p>Probability of randomly choosing an Indian  <i>Waarskynlikheid om 'n Indier te kies</i></p> <p><math>= \frac{171}{4\,500\,000} \times 100\%</math> ✓A ✓M</p> <p><math>\approx 0,0038\% &lt; 0,004\%</math> ✓CA</p> <p>He is correct. ✓O  <i>Hy is korrek.</i></p>	<p>1A numerator  1A denominator  1M percentage</p> <p>1CA simplification</p> <p>1O verification</p> <p>(5)</p>	P L4

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
1.3.2	<p>Difference/<i>Verskil</i> = Rs40 000 ✓A</p> $\text{Rs}40\,000 = \frac{40\,000}{63,41} \overset{\checkmark\text{MA}}{\text{US Dollar/Am. dollar}}$ $\frac{40\,000}{63,41} \text{ US dollar/Am. dollar} = \frac{40\,000}{63,41} \div 0,081 \text{ SA rand}$ $= \text{R } 630,8153\dots \div 0,081$ $\approx \text{R } 7\,787,84 \quad \checkmark\text{CA}$ <p style="text-align: center;"><b>OR/OF</b></p> $\text{Rs}50\,000 = \frac{50\,000}{63,41} \overset{\checkmark\text{MA}}{\text{USD}} = 788,51916\dots \div 0,081 \overset{\checkmark\text{MA}}{\text{SA rand}}$ $\approx \text{R } 9\,734,80 \quad \checkmark\text{S}$ $\text{Rs } 10\,000 = \frac{10\,000}{63,41} \text{ USD} = 157,7038\dots \div 0,081 \text{ SA rand}$ $\approx \text{R } 1\,946,96 \quad \checkmark\text{S}$ <p>Difference/<i>Verskil</i> = R9 734,80 – R1 946,96</p> $= \text{R } 7\,787,84 \quad \checkmark\text{CA}$ <p style="text-align: center;"><b>OR/OF</b></p> $\text{R}1 \div 0,081 = \text{R}12,35 \quad \checkmark\text{A}$ $\text{Rs}50\,000 \times \text{R}12,35 \div 63,45 \quad \checkmark\text{MA}$ $= \text{R } 9\,732,07 \quad \checkmark\text{S}$ $\text{Rs}10\,000 \times \text{R}12,35 \div 63,45$ $= \text{R } 1\,946,41 \quad \checkmark\text{S}$ $\text{R}9\,732,07 - \text{R}1\,946,41$ $= \text{R } 7\,785,66 \quad \checkmark\text{CA}$	<p>1A difference</p> <p>1MA convert to dollars</p> <p>1S simplification</p> <p>1MA convert to rand</p> <p>1CA simplification in rand</p> <p style="text-align: center;"><b>OR/OF</b></p> <p>1MA convert to dollars</p> <p>1MA convert to rand</p> <p>1S simplification</p> <p>1S simplification</p> <p>1CA difference in rand</p> <p style="text-align: center;"><b>OR/OF</b></p> <p>1A rand per dollar ratio</p> <p>1MA converting</p> <p>1S simplification</p> <p>1S simplification</p> <p>1CA difference in rand</p> <p><b>NPR</b></p> <p style="text-align: right;">(5)</p>	F L3
1.3.3	<p>Change received / <i>Kleingeld ontvang</i> = Rs4 000 – Rs2 440 = Rs1 560 ✓MA</p> $3 \times \text{Rs}500 = \text{Rs}1\,500$ $1 \times \text{Rs}50 = \text{Rs } 50$ $1 \times \text{Rs}10 = \text{Rs } 10 \quad \checkmark\text{MA}$ $5 \text{ notes} = \text{Rs}1\,560$ <p>✓A ✓O</p> <p>NOT VALID, 5 is the minimum</p> <p><i>NIE GELDIG nie, 5 is die minimum</i></p>	<p>1MA difference</p> <p>1MA breakdown of the change</p> <p>1A five</p> <p>1O not valid</p> <p style="text-align: right;">(4)</p>	F L4
		<b>[35]</b>	

<b>QUESTION/VRAAG 2 [38MARKS/PUNTE]</b>			
<b>Q/V</b>	<b>Solution/Oplissing</b>	<b>Explanation/Verduideliking</b>	<b>T&amp;L</b>
2.1.1	Right-hand side <b>OR</b> Western side ✓✓A <i>Regterkant OF Westelikekant</i>	2A correct side (2)	M&P L2
2.1.2 (a)	140 mm : 3 500 mm ✓MA 1 : 3 500 ÷ 140 ✓M = 1 : 25 ✓A	1MA values in correct order 1M dividing by 140 1A simplification (3)	M&P L3
2.1.2 (b)	Length/ <i>Lengte</i> = 6 000 ÷ 25 ✓MCA = 240 mm ✓CA = 24 cm ✓C  <b>OR/OF</b>  140 : 3 500 ✓M <i>x</i> : 6 000  3 500 <i>x</i> = 840 000 ✓CA <i>x</i> = 240 mm  = 24 cm ✓C	CA from 2.1.2(a) 1MCA dividing by scale factor 1CA length in mm  1C converting to cm  <b>OR/OF</b>  1M concept of proportion  1CA length in mm  1C converting to cm (3)	M&P L3
2.1.3	Side door area/ <i>Sydeur opp.</i> = 2 000 mm × 800 mm ✓SF = 1 600 000 mm <sup>2</sup> ✓A  Garage door area/ <i>Motorhuisdeur opp.</i> = 2 400 mm × 2 100 mm ✓A = 5 040 000 mm <sup>2</sup>  Window area/ <i>Vensteropp.</i> = 1 500 mm × 900 mm = 1 350 000 mm <sup>2</sup> ✓A  Total area/ <i>Totale oppervlakte</i> ✓M = (1 600 000 + 5 040 000 + 1 350 000) mm <sup>2</sup>  = 7 990 000 mm <sup>2</sup> ✓MCA	1SF substitution 1A side door area  1A garage door area  1A window area  1M adding 3 areas  1MCA simplification (6)	M L2

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
2.1.4	$41\,410\,000\text{ mm}^2 = 41,410\text{ m}^2 \quad \checkmark\text{C}$ Number of bricks/ <i>Aantal stene</i> = $41,41 \times 68 \quad \checkmark\text{M}$ $= 2\,815,88 \quad \checkmark\text{CA}$ Number of pallets/ <i>Aantal palette</i> = $2\,815,88 \div 500 \quad \checkmark\text{M}$ $= 5,63176 \quad \checkmark\text{S}$ $\approx 6 \quad \checkmark\text{R}$ <b>OR/OF</b> $41\,410\,000\text{ mm}^2 = 41,410\text{ m}^2 \quad \checkmark\text{C}$ Area covered by bricks of 1 pallet/ <i>Oppervlakte beslaan deur stene van 1 pallet</i> $= \frac{500}{68} = 7,35\text{ m}^2 \quad \checkmark\text{M} \quad \checkmark\text{CA}$ Number of pallets/ <i>Aantal palette</i> = $\frac{41,41}{7,35} \quad \checkmark\text{M}$ $= 5,63 \quad \checkmark\text{S}$ $\approx 6 \quad \checkmark\text{R}$ <b>OR/OF</b> 68 bricks for $1\,000\,000\text{ mm}^2 \quad \checkmark\text{C}$ <i>68 stene vir <math>1\,000\,000\text{ mm}^2</math></i> $\therefore 41\,410\,000\text{ mm}^2 = \frac{41\,410\,000 \times 68}{1\,000\,000} \quad \checkmark\text{M}$ $= 2\,815,88\text{ bricks/stene} \quad \checkmark\text{CA}$ Number of pallets/ <i>Aantal palette</i> = $2\,815,88 \div 500 \quad \checkmark\text{M}$ $= 5,63176 \quad \checkmark\text{S}$ $\approx 6 \quad \checkmark\text{R}$	1C converting to $\text{m}^2$ 1M multiplying 1CA simplification 1M dividing 1S simplification 1R rounding up <b>OR/OF</b> 1C converting to $\text{m}^2$ 1M dividing 1CA area 1M dividing 1S simplification 1R number of pallets <b>OR/OF</b> 1C converting to $\text{mm}^2$ 1M multiplying 1CA simplification 1M dividing 1S simplification 1R rounding up (6)	M L3
2.1.5	Cost/ <i>Koste</i> $= \text{R}1\,685 \times 6 + \text{R}1\,575 + \text{R}629,95 + \text{R}1\,119,95 \quad \checkmark\text{MCA} \quad \checkmark\text{M}$ $= \text{R}13\,434,90 \quad \checkmark\text{CA}$ Not valid $\quad \checkmark\text{O}$ <i>Nie geldig nie</i>	<b>CA from Q2.1.4</b> 1MCA brick cost 1M adding 4 values 1CA simplification 1O conclusion <b>NPR</b> (4)	F L4

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
2.1.6	<p>SI = Principal amount <math>\times</math> interest rate <math>\times</math> time in years  <i>Enkelvoudige rente = Hoofsom <math>\times</math> rentekoers <math>\times</math> tyd in jaar</i></p> $= R35\,000 \times 8\% \times \frac{7}{12} \quad \checkmark\text{SF}$ $= R1\,633,33 \quad \checkmark\text{CA}$ <p>Total to be paid back/<i>Totale terug betaling</i></p> $= R35\,000 + R1\,633,33$ $= R36\,633,33 \quad \checkmark\text{CA}$ <p style="text-align: center;"><b>OR/OF</b></p> $A = P(1 + in)$ $= R35\,000 \left( 1 + 8\% \times \frac{7}{12} \right) \quad \checkmark\text{SF}$ $= R35\,000(1,04666\dots)$ $\approx R36\,633,33 \quad \checkmark\checkmark\text{CA}$	<p>1SF substituting correct values  1CA simplification</p> <p>1CA simplification</p> <p style="text-align: center;"><b>OR/OF</b></p> <p>1SF substitution</p> <p>2CA total amount</p> <p style="text-align: right;">(3)</p>	F L3
2.2.1	<p>1 foot/<i>voet</i> = 12 inches/<i>duim</i></p> $= 12 \times 25,4 \text{ mm} \quad \checkmark\text{M}$ $= 304,8 \text{ mm}$ $= 0,3048 \text{ m} \quad \checkmark\text{C}$ $\therefore 6 \text{ m} = \frac{6}{0,3048} \text{ foot/voet}$ $\approx 19,685 \text{ feet/voet} \quad \checkmark\text{CA}$ <p>10 feet slopes <math>\frac{1}{2}</math> inch  <i>10 voet is laer met <math>\frac{1}{2}</math> duim</i></p> $\therefore D = \frac{19,685}{10} \times \frac{1}{2} \quad \checkmark\text{M}$ $= 0,98425 \text{ inches/duim} \quad \checkmark\text{CA}$ $= 0,98425 \times 25,4 \text{ mm}$ $\approx 25 \text{ mm} \quad \checkmark\text{CA}$ <p style="text-align: center;"><b>OR/OF</b></p>	<p>1M multiplying</p> <p>1C convert to m</p> <p>1CA convert to feet</p> <p>1M dividing and multiplying</p> <p>1CA simplification</p> <p>1CA simplification</p> <p style="text-align: center;"><b>OR/OF</b></p>	M L4

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
	<p>6 m = 6 000 mm                      25,4 mm = 1 inch/duim                      6 000 mm = x inches/duim</p> <p><math>x \times 25,4 = 6\,000</math></p> <p><math>x = \frac{6\,000}{25,4} \approx 236,22</math> inches/duim ✓M ✓C</p> <p>236,22 inches/duim</p> <p><math>= \frac{236,22}{12}</math> feet/voet = 19,685 feet/voet ✓CA</p> <p>Slope ½ inch for 10 feet                      10 voet is laer met ½ duim</p> <p><math>\therefore D = \frac{19,685}{10} \times \frac{1}{2}</math> ✓M</p> <p>= 0,98425 inches/duim ✓CA</p> <p>= 0,98425 × 25,4 mm</p> <p>≈ 25 mm ✓CA</p> <p style="text-align: center;"><b>OR/OF</b></p> <p>½ inch/duim = 12,7mm ✓MA</p> <p>1 foot/voet = 12 inches/duim</p> <p><math>\therefore 10</math> feet/voet = 120 inches/duim ✓A</p> <p><math>\therefore 120 \times 25,4 = 3\,048</math> mm ✓C</p> <p><math>\therefore 12,7</math> mm : 3 048mm</p> <p>x : 6 000 mm</p> <p><math>x = \frac{12,7 \times 6\,000}{3\,048}</math> ✓M</p> <p>x = 25 mm ✓CA</p> <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> <p><b>OR</b></p> <p><math>120</math> inches: <math>\frac{1}{2}</math> inch ✓A</p> <p>= 240:1 ✓S</p> <p><math>\therefore 6m : D</math> ✓M</p> <p><math>D = \frac{6m}{240} = 0,025m</math> ✓S</p> <p>= 25 mm ✓C</p> </div>	<p>1M divide</p> <p>1C convert to inches</p> <p>1CA convert to feet</p> <p>1M dividing and multiplying</p> <p>1CA convert to inches</p> <p>1CA simplification</p> <p style="text-align: center;"><b>OR/OF</b></p> <p>1MA use of proportion</p> <p>1A feet to inches</p> <p>1M multiply</p> <p>1C conversion to mm</p> <p>1M use of proportion</p> <p>1CA simplification</p> <p style="text-align: right;">(6)</p>	
2.2.2	<p>Volume = <math>3,142 \times (40\text{ cm})^2 \times 1,20</math> m ✓A ✓SF</p> <p>= <math>3,142 \times (40\text{ cm})^2 \times 120</math> cm ✓C</p> <p>= 603 264 cm<sup>3</sup> ✓S</p> <p>= 603, 264 ℓ ✓C</p>	<p>1A radius</p> <p>1SF substituting</p> <p>1C converting height to cm</p> <p>1S simplification</p> <p>1C converting to litres</p> <p style="text-align: right;">(5)</p>	M L3
		[38]	



<b>QUESTION/VRAAG3 [38MARKS/PUNTE]</b>			
<b>Q/V</b>	<b>Solution/Oplissing</b>	<b>Explanation/Verduideliking</b>	<b>T&amp;L</b>
3.1.1	Local share /Plaaslike gedeelte $= R410,6 \times 20,12\%$ ✓MA $= R82,61272$ ✓CA $E = R453,4 + R410,6 + R82,61272$ ✓MCA $\approx R946,6$ ✓CA	1MA calculating 20,12% 1CA simplification 1MCA adding 1CA simplification NPR (4)	F L2
3.1.2	Percentage increase/Persentasieverhoging $= \frac{R546,1 - R490,00}{R490,00} \times 100\%$ ✓RT ✓M $= 11,4489... \% \approx 11,45\%$ ✓CA <b>OR/OF</b> Percentage/persentasie $R546,10 \div R490 \times 100\% = 111,45\%$ ✓RT Increase/Verhoging $111,45\% - 100\% = 11,45\%$ ✓M ✓MCA	1RT reading correct values 1M % increase 1CA simplification <b>OR/OF</b> 1RT correct values 1M subtracting 100% 1MCA simplification (3)	F L2
3.1.3	National government sector services the whole country and not just one province. <i>Nasionale regering sektor bedien die hele land en nie            net een provinsie nie.</i> ✓✓O <b>OR/OF</b> ✓✓O National government sector assist provinces when the need arises like during drought, or wild fires. <i>Nasionale regeringsektor staan die provinsies by tydens            droogte of brande.</i> ✓✓O <b>OR/OF</b> ✓✓O National government sector has more expenses. <i>Nasionale regeringsektor het meer uitgawes.</i> <b>OR/OF</b> ✓✓O National government sector employs more people. <i>Nasionale regeringsektor het meer mense indiens.</i> ✓✓O	2O explanation (2)	F L4

Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
3.1.4	<p>Total ratio/<i>Totale verhouding</i></p> $= 1 + 4,784 + 5,246 = 11,03 \quad \checkmark\text{MA}$ <p>Local sector/<i>Plaaslike sektor</i></p> $= \frac{1 \checkmark\text{A}}{11,03} \times \text{R}1\,240,5 \text{ billion/miljard} \quad \checkmark\text{MCA}$ $= \text{R}112,466\dots \text{billion/miljard} \text{ or/of } \text{R}112\,466\,001\,800$ $\approx \text{R}112,5 \text{ billion/miljard} \text{ or/of } \text{R}112\,500\,000\,000 \quad \checkmark\text{S}$	<p>1MA adding ratio values</p> <p>1A fraction 1MCA multiplying</p> <p>1S simplification in billions <b>NPR final answer</b></p> <p>(4)</p>	F L3
3.2	<p>Annual taxable income <i>Jaarlikse belasbare inkomste</i></p> $= 12 \times \text{R}46\,308,50 = \text{R}555\,702 \quad \checkmark\text{A}$ <p>Tax due/<i>Belasting verskuldig</i></p> $= \text{R}149\,475 + 39\% (\text{R}555\,702 - \text{R}555\,600) \quad \checkmark\text{RT} \quad \checkmark\text{SF}$ $= \text{R}149\,475 + 39\% (\text{R}102)$ $= \text{R}149\,514,78 \quad \checkmark\text{S}$ <p>Tax payable/<i>Belasting betaalbaar</i></p> $= \text{R}149\,514,78 - \text{R}13\,500 \quad \checkmark\text{M}$ $= \text{R}136\,014,78 \quad \checkmark\text{CA}$ <p>Monthly tax/<i>Maandelikse belasting</i></p> $= \text{R}136\,014,78 \div 12$ $= \text{R}11\,334,565 \approx \text{R}11\,334,57 \quad \checkmark\text{CA}$	<p>1A annual taxable income</p> <p>1RT correct tax bracket 1SF substitution or R102</p> <p>1S simplification</p> <p>1M subtracting rebate 1CA simplification</p> <p>1CA monthly tax</p> <p>(7)</p>	F L3

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
3.3.1	4 ✓✓A	2A number of boxes (2)	MP L2
3.3.2	<p>Number of sheets/<i>Aantal velle</i> = <math>\frac{2750}{4}</math> ✓M  = 687,5 ✓CA  ∴ Not enough/<i>Nie genoeg nie</i> ✓O</p> <p style="text-align: center;"><b>OR/OF</b></p> <p>Number of boxes/<i>Aantal kaste</i> = <math>687 \times 4</math> ✓M  = 2 748 ✓CA  ∴ Not enough / <i>Nie genoeg nie</i> ✓O</p> <p style="text-align: center;"><b>OR/OF</b></p> <p>Number of boxes per sheet  <i>Aantal kaste per vel</i>  = <math>\frac{2750}{687}</math> ✓M  = 4,002911208 ✓CA  ∴ Not enough / <i>Nie genoeg nie</i> ✓O</p>	<p>CA from 3.3.1  1M dividing  1CA number of sheets  1O conclusion</p> <p style="text-align: center;"><b>OR/OF</b></p> <p>1M multiplying  1CA number of boxes  1O conclusion</p> <p style="text-align: center;"><b>OR/OF</b></p> <p>1M dividing  1CA number of boxes/sheet  1O conclusion  (3)</p>	MP L4
3.3.3 (a)	<p>Income per box /<i>Inkomste per kas</i>  = <math>\frac{R860\,000}{2\,000}</math> ✓RT  ✓M  = R430 ✓CA</p>	<p>1RT reading correct value  1M division by 2 000  1CA income per box  [Accept R400 – R430]  (3)</p>	F L2
3.3.3 (b)	<p>✓✓RT  1 280 boxes/<i>kaste</i></p>	<p>2RT estimation  [Accept 1 250 – 1 300]  [Accept answer by  calculation]  (2)</p>	F L3

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
3.3.3 (c)	Variable cost per box <i>Veranderlike koste per kas</i> $= (R680\ 000 - R320\ 000) \div 2\ 000$ $= \frac{R360\ 000}{2\ 000} \quad \checkmark \text{CA}$ $= R180 \quad \checkmark \text{CA}$ Total Cost = Variable cost + Fixed cost <i>Totale koste = veranderlike koste + vaste koste</i> $= (R180 \times 2750) + R320\ 000 \quad \checkmark \text{MCA}$ $= R815\ 000 \quad \checkmark \text{CA}$ Income/ <i>Inkomste</i> = $R430 \times 2750 \quad \checkmark \text{M}$ $= R1\ 182\ 500 \quad \checkmark \text{CA}$ Profit/ <i>Wins</i> = $R1\ 182\ 500 - R815\ 000$ $= R367\ 500 \quad \checkmark \text{CA}$ Her projection is VALID $\checkmark \text{O}$ <i>Haar projeksie is GELDIG</i>	1CA using <b>ANY TWO</b> cost values or from Q3.3.3.(a)/(b) 1CA value 1MCA multiplying and adding 1 CA calculating cost 1M multiplying by 2 750 1CA income 1CA profit 1O conclusion (CA from Q3.3.3.(a)/(b))	F L4 (8)
			<b>[38]</b>

<b>QUESTION/VRAAG4 [39MARKS/PUNTE]</b>			
<b>Q/V</b>	<b>Solution/Oplissing</b>	<b>Explanation/Verduideliking</b>	<b>T&amp;L</b>
4.1.1	<p style="text-align: right;">✓✓O</p> <p>Staff working at the gates need to go home. <i>Mense wat by die hekke werk moet huis toe gaan.</i></p> <p style="text-align: right;">✓✓O</p> <p>The wild animals in the park makes it unsafe to travel or be in unprotected parts during the night. <i>Wilde diere in die park maak dit onveilig om te reis of in onbeskermdede gebiede te wees.</i></p> <p style="text-align: center;"><b>OR/OF</b></p> <p style="text-align: right;">✓✓O</p> <p>Animals are not visible in the dark, park/camp gates open when people can see the animals. <i>Die diere is nie sigbaar in die donker; park/kamp hekke maak oop wanneer mense die diere kan sien.</i></p> <p style="text-align: center;"><b>OR/OF</b></p> <p>To avoid overcrowding. <i>Om te voorkom dat dit oorvol is</i></p> <p style="text-align: right;">✓✓O</p> <p style="text-align: center;"><b>OR/OF</b></p> <p>Access control/<i>Toegangsbeheer.</i> ✓✓O</p> <p style="text-align: center;"><b>OR/OF</b></p> <p><b>Security reasons/Sekuriteitsredes.</b> ✓✓O</p> <p style="text-align: center;"><b>OR/OF</b></p> <p>So that people travelling from far or within the Kruger National Park, can plan ahead. <i>Sodat mense wat van ver kom of binne die Kruger Nasionale Park is, vooruit kan beplan.</i></p> <p style="text-align: right;">✓✓O</p> <p style="text-align: center;"><b>OR/OF</b></p> <p>Accept any other valid answer. ✓✓O <i>Aanvaar enige ander geldige antwoord.</i></p>	<p>2O 1<sup>st</sup> reason</p> <p>2O 2<sup>nd</sup> reason</p> <p>(4)</p>	D L4
4.1.2	Skukuza ✓✓A	2A correct camp (2)	MP L2
4.1.3	<p>Orpen to/na Satara 48 km ✓RT</p> <p>Satara to Lower Sabie 93 km ✓RT</p> <p><i>Satara na Onder Sabie</i> 93 km</p> <p style="text-align: right;">✓A</p> <p>Total distance/<i>Totale afstand</i> = 48 km + 93 km = 141 km</p>	<p>1RT distance to Satara</p> <p>1RT distance to Sabie</p> <p>1A total distance (3)</p>	MP L3
4.1.4	<p>Main camps/<i>Hoofkampe</i> = 7 ✓RT</p> <p>Other camps/<i>Ander kampe</i> = 5</p> <p>Difference/<i>Verskil</i> = 7 – 5 = 2 ✓CA</p>	<p>1RT number of both camps</p> <p>1CA difference with 1 correct camp <b>AO</b> (2)</p>	MP L2

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
4.1.5	<p>Distance = speed × time  <i>Afstand = spoed × tyd</i></p> <p><math>64 \text{ km} = 40 \text{ km/h} \times \text{time}</math> ✓RT ✓SF</p> <p>Time on gravel road  <i>Tyd op gruispad</i></p> <p><math>= \frac{64 \text{ km}}{40 \text{ km/h}}</math> ✓S</p> <p><math>= 1,6 \text{ h}</math> ✓CA</p> <p><math>= 1\text{h}36 \text{ min}</math> ✓C</p> <p>Time he will arrive at the gate is  <i>Aankomstyd by die hek is</i></p> <p><math>17:03 + 1\text{h}36 \text{ min}</math>  <math>= 18:39</math> ✓CA</p>	<p>1RT distance  1SF substitution with 40 km/h</p> <p>1S change the formula</p> <p>1CA time  1C conversion</p> <p>1CA arrival time</p> <p>(6)</p>	M L3
4.1.6	<p>The roads are not so busy / people drive slower / more animals are visible. ✓✓O  <i>Die paaie is nie so besig nie/ mense ry stadiger / diere is sigbaar.</i></p> <p><b>OR/OF</b></p> <p>It is the scenic route/<i>Sien meer op die pad.</i></p> <p><b>OR/OF</b></p> <p>The route blends in with nature and gives a more authentic bushveld experience.  <i>Die roete smelt met die natuur saam en gee 'n ware bosveldervaring.</i></p> <p><b>OR/OF</b></p> <p>Gravel roads gives you more access (short cut) to different parts of the park.  <i>Gruispaaie gee jou meer toegang (kortpad) tot verskillende dele van die park.</i></p> <p><b>OR/OF</b></p> <p>To experience a sense of adventure  <i>Om avontuur te ervaar.</i></p> <p>Accept any other reasonable answer.  <i>Aanvaar enige ander redelike antwoord.</i></p>	<p>2O reason</p> <p>(2)</p>	MP L4
4.2.1	<p><math>P_{\text{Indian/Indiër}} = \frac{6}{4\ 081}</math> ✓A or/of 0,00147 or/of 0,147% ✓A</p>	<p>1A numerator  1A denominator</p> <p>(2)</p>	P L2

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
4.2.2	Coloured Employees /Kleurlingwerknemers <span style="float: right;">✓MA</span> $622 - 80 - 141 = 401$ <b>or/of</b> $2\ 111 - (49 + 4 + 1\ 657) = 401$  P Coloured level B/Kleurlingvlak B  $= \frac{401}{2\ 111}$ <span style="float: right;">✓CA</span> <b>or/of</b> 0,18995 <b>or/of</b> 19% <span style="float: right;">✓A</span>	1MA finding the missing value   1CA numerator 1A denominator  (3)	P L3
4.3.1	$\text{Difference/Verskil} = 260 \text{ USD} - 80 \text{ USD}$ <span style="float: right;">✓RT</span> $= 180 \text{ USD}$ <span style="float: right;">✓CA</span>	1RT Jimbaran (255 – 265) 1RT Kula (70 – 85) 1CA difference  (3)	F L2
4.3.2	The percentage occupancy decreased from 2011 to 2013 <i>Die persentasie besetting het gedaal van 2011 tot 2013</i> but increased again in 2014 <i>maar dit styg weer in 2014</i>	1O decrease 1O years 1O increase 1O year  (4)	D L4
4.3.3	The average daily rates in Ubud had a increase. <i>Die daaglikse gemiddelde tarief in Ubud het skerp gestyg.</i>  It affected the occupancy negatively <b>or</b> the occupancy percentage went down. <i>Dit het die besettingskoers negatief beïnvloed of die besettingskoers het gedaal.</i>	2O magnitude of the increase   2O effect on the occupancy percentage  (4)	D L4
4.3.4	The first part of the graph represents the years 2010 to 2014/ <b>or</b> number of years. <i>Die eerste gedeelte stel jare voor /2010 tot 2014.</i>  The second part of the graph represents Year to Date of September 2014 and September 2015 <b>or</b> the second part represents only ONE year from September to September the next year. <i>Die tweede gedeelte stel Jaar tot Datum voor of slegs EEN jaar van September 2014 tot September 2015.</i>	2O explanation of the first part   2O explanation of the second part.  [Accept There is no relationship between the two parts of the graphs but Max 2 marks]  (4)	D L4
		[39]	
<b>TOTAL/TOTAAL :150</b>			