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# basic education

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

## **NATIONAL SENIOR CERTIFICATE/ NASIONALE SENIOR SERTIFIKAAT**

**GRADE/GRAAD 12**

**MATHEMATICAL LITERACY P2/  
WISKUNDIGE GELETTERDHEID V2**

**NOVEMBER 2024**

**MARKING GUIDELINES/NASIENRIGLYNE**

**MARKS/PUNTE: 150**

| Symbol/Kode | Explanation/Verduideliking                                                                                                                                                  |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>MA</b>   | Method with accuracy/ <i>Metode met akkuraatheid</i>                                                                                                                        |
| <b>MCA</b>  | Method with consistent accuracy/ <i>Metode met volgehoue 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/graph/document/diagram/ <i>Lees vanaf tabel/grafiek/dokument/diagram</i>                                                                               |
| <b>SF</b>   | Correct substitution in a formula/ <i>Korrekte vervanging in 'n 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>Penalisering, bv. vir geen eenhede, verkeerde afronding, ens.</i>                                              |
| <b>NPR</b>  | No penalty for correct rounding/ <i>Geen penalisering vir korrekte afronding nie</i>                                                                                        |
| <b>NPU</b>  | No penalty for omitting unit, but wrong unit is penalised/ <i>Geen penaliseringe indien die eenheid uitgelos is nie, maar wel indien 'n verkeerde eenheid gebruik word.</i> |
| <b>AO</b>   | Answer only/ <i>Slegs antwoord</i>                                                                                                                                          |

**These marking guidelines consist of 17 pages.  
Hierdie nasienriglyne bestaan uit 17 bladsye.**



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**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 guidelines; 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.
- Rounding is an independent mark.
- General principle of marking, if the candidate makes one mistake one mark is deducted.
- A conclusion mark can only be given if  $\frac{1}{3}$  of the total marks for the sub-question have been awarded.
- No penalty for rounding (NPR) if the first decimal is correct.

**LET WEL:**

- As 'n kandidaat 'n vraag TWEE KEER beantwoord, sien slegs die EERSTE poging na.
- As 'n kandidaat 'n antwoord van 'n vraag doodtrek (kanselleer) en nie oordoen nie, sien die doodgetrekte (gekanselleerde) poging na.
- Volgehoue akkuraatheid (CA) word in ALLE aspekte van die nasienriglyne toegepas; dit hou egter op by die tweede berekeningsfout.
- Wanneer 'n kandidaat aflesings vanaf 'n grafiek, tabel, uitlegplan en kaart aanbied en ekstra antwoorde gee, penaliseer vir elke ekstra item.
- Afronding tel as 'n afsonderlike punt.
- Die algemene beginsel van nasien is, as 'n leerder een fout maak, word een punt afgetrek.
- 'n Gevolgtrekkingspunt kan slegs gegee word indien  $\frac{1}{3}$  van die totale punte vir die subvraag toegeken is.
- Geen penalisering vir afronding (NPR) nie as die eerste desimaal korrek is.

| <b>QUESTION/VRAAG 1 [26 MARKS/26 PUNTE] ANSWER ONLY FULL MARKS</b> |                                                                                                      |                                                                  |                |
|--------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|----------------|
| <b>Q/V</b>                                                         | <b>Solution/Oplossing</b>                                                                            | <b>Explanation/Verduideliking</b>                                | <b>T&amp;L</b> |
| *<br>1.1.1                                                         | D ✓✓ A                                                                                               | 2A correct option<br>(2)                                         | M<br>L1<br>E   |
| *<br>1.1.2                                                         | E ✓✓ A                                                                                               | 2A correct option<br>(2)                                         | MP<br>L1<br>E  |
| *<br>1.1.3                                                         | C ✓✓ A                                                                                               | 2A correct option<br>(2)                                         | M<br>L1<br>E   |
| *<br>1.1.4                                                         | G ✓✓ A                                                                                               | 2A correct option<br>(2)                                         | M<br>L1<br>E   |
| 1.2.1                                                              | ✓ MA<br>$220 \text{ mm} \div 1\,000 = 0,22 \text{ m}$ ✓ A                                            | 1MA $\div 1\,000$<br>1A conversion<br>(2)                        | M<br>L1<br>E   |
| *<br>1.2.2                                                         | A ✓✓ A                                                                                               | 2A correct option.<br>(2)                                        | M<br>L1<br>M   |
| *<br>1.2.3                                                         | Number of bricks / Aantal stene<br>✓RT<br>$= 2\,860 \text{ mm} \div 220 \text{ mm}$ ✓MA<br>$= 13$ ✓A | 1RT correct values<br>1MA dividing<br>1A number of bricks<br>(3) | M<br>L1<br>M   |

| Q/V        | Solution/Oplissing                                                                                                                                          | Explanation/Verduideliking                                 | T&L           |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|---------------|
| *<br>1.3.1 | 18 ✓✓A                                                                                                                                                      | 2A correct number<br>(2)                                   | MP<br>L1<br>E |
| *<br>1.3.2 | Number of cross pieces / <i>Getal dwarsstutte</i><br>✓RT<br>$= 6 \times 3$ ✓A<br>$= 18$ ✓A                                                                  | 1RT 6<br>1A multiply by 3<br>1A pieces<br>(3)              | MP<br>L1<br>M |
| *<br>1.3.3 | Chair support / <i>Rugleuningbalk</i> ✓✓RT                                                                                                                  | 2RT correct option<br>(2)                                  | MP<br>L1<br>E |
| 1.3.4      | 1,9 cm ✓✓A                                                                                                                                                  | 2A correct dimension<br>NPU<br>(2)                         | MP<br>L1<br>E |
| 1.3.5      | Space between cross pieces: / <i>Opening tussen dwarsstutte:</i><br>✓ RT<br>$\text{Space/Opening} = 1,27 \times 10 \text{ mm}$<br>$= 12,7 \text{ mm}$ ✓ MCA | 1RT correct value<br><br>1MCA simplification<br>NPU<br>(2) | MP<br>L1<br>E |
|            |                                                                                                                                                             | [26]                                                       |               |



| <b>QUESTION 2 [31 MARKS/31 PUNTE]</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                    |                |
|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| <b>Q/V</b>                            | <b>Solution/Oplissing</b>                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>Explanation/Verduideliking</b>                                                                                                                                                                                  | <b>T&amp;L</b> |
| 2.1.1                                 | <p>View from the top. ✓✓ A<br/>Aansig van bo.</p> <p><b>OR/OF</b></p> <p>View of the landscape from a certain height above ground like from a satellite or drone. ✓✓ A<br/>Aansig van die landskap vanaf 'n seker hoogte bo die grond soos vanaf 'n satelliet of hommeltuig.</p> <p><b>OR/OF</b></p> <p>View from an elevated height. ✓✓ A<br/>Aansig vanaf 'n verhewe hoogte.</p> <p><b>OR/OF</b></p> <p>Birds-eye view. ✓✓ A<br/>Voëlperspektief.</p> | <p>2A correct explanation</p> <p>(2)</p>                                                                                                                                                                           | MP<br>L1<br>E  |
| 2.1.2                                 | <p>Number of campers/Getal kampeerders<br/>✓RT ✓MCA<br/>= 6 + 15 + 4 + 15 + 4 + 4 + 5 + 15 + 8 + 10 + 6 + 6 + 20<br/>= 118 ✓CA</p> <p><b>OR/OF</b></p> <p>Number of campers/Getal kampeerders<br/>= 20 + 15(3) + 10 + 8 + 6(3) + 5 + 4(3) ✓RT ✓MCA<br/>= 118 ✓CA</p>                                                                                                                                                                                    | <p>1RT all correct values<br/>1MCA adding values<br/>1CA simplification<br/><b>AO</b></p> <p><b>OR/OF</b></p> <p>1RT all correct values<br/>1MCA adding values<br/>1CA simplification<br/><b>AO</b></p> <p>(3)</p> | MP<br>L1<br>E  |
| 2.1.3                                 | South West/SW/Suidwes SW ✓✓ A                                                                                                                                                                                                                                                                                                                                                                                                                           | <p>2A compass direction</p> <p>(2)</p>                                                                                                                                                                             | MP<br>L1<br>E  |
| *<br>2.1.4                            | 2 ✓✓ O                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <p>2O identifying correct site</p> <p>(2)</p>                                                                                                                                                                      | MP<br>L2<br>M  |
| 2.1.5                                 | <p><math>\frac{3}{13} \times 100\%</math> ✓A<br/>✓A<br/>= 23,076923% ✓CA</p>                                                                                                                                                                                                                                                                                                                                                                            | <p>1A correct numerator<br/>1A correct denominator</p> <p>1CA simplification<br/><b>NPR</b></p> <p>(3)</p>                                                                                                         | P<br>L2<br>D   |
| 2.1.6<br>(a)                          | 9 showers/storte ✓✓ A                                                                                                                                                                                                                                                                                                                                                                                                                                   | <p>2A correct number</p> <p>(2)</p>                                                                                                                                                                                | MP<br>L1<br>E  |



| Q/V               | Solution/Oplissing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Explanation/Verduideliking                                                                                                                                                                                     | T&L           |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| *<br>2.1.6<br>(b) | $\checkmark A$<br>$90 \text{ mm} = 8,2 \text{ m}$<br>$\checkmark C$<br>$90 \text{ mm} = 8\,200 \text{ mm} (\div 90)$ $\checkmark M$<br><br>$1 : 91,11$<br>$1 : 91 \checkmark R$<br><br><b>OR/OF</b><br><br>$\checkmark A$<br>$9 \text{ cm} : 8,2 \text{ m}$<br>$9 \text{ cm} : 820 \text{ cm} \checkmark C$<br>$= 1 : 91,11.. \checkmark M$<br>$= 1 : 91 \checkmark R$<br><br><div style="border: 1px solid black; padding: 5px;"> <b>Accept <math>\pm 1 \text{ mm}</math> deviation on measurement per province</b><br/> <i>Aanvaar <math>\pm 1 \text{ mm}</math>-afwyking op meting per provinsie</i> </div>       | <br>1A measured distance<br>1C convert to mm<br>1M divide by 90<br><br>1R rounded answer<br><br><b>OR/OF</b><br><br>1A measured distance<br>1C convert to cm<br>1M divide by 9<br>1R rounded answer<br><br>(4) | MP<br>L2<br>M |
| 2.1.6<br>(c)      | To allow people to sit while waiting for a toilet or shower to become available. $\checkmark \checkmark O$<br><i>Vir mense om op te sit terwyl hulle wag dat 'n toilet of stort beskikbaar word.</i><br><br><b>OR/OF</b><br>To place your clothes or belongings on while you are showering.<br><i>Om jou klere of besittings neer te sit terwyl jy stort.</i><br><br><b>OR/OF</b><br>To sit while you change your outfit, or getting dressed or apply body lotion or for baby nappy change.<br><i>Om op te sit terwyl jy jou uitrusting verander of terwyl jy aantrek of lyfroom aansmeer of babadoeke verander.</i> | <br>2O reason<br><br><br><br><br><br><br>(2)                                                                                                                                                                   | MP<br>L4<br>M |
| 2.2.1             | Day 2 / Dag 2 $\checkmark \checkmark A$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 2A correct description<br><br>(2)                                                                                                                                                                              | MP<br>L2<br>E |
| *<br>2.2.2        | D $\checkmark \checkmark RT$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 2RT correct option<br><br>(2)                                                                                                                                                                                  | MP<br>L2<br>M |
| *<br>2.2.3        | 12,5 km $\checkmark \checkmark RT$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2RT correct distance<br><br>(2)                                                                                                                                                                                | MP<br>L2<br>E |



| Q/V        | Solution/Oplissing                                                                                                                                                                                                                                                                    | Explanation/Verduideliking                                                                                      | T&L           |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|---------------|
| 2.2.4      | <p>The part shows a continuous downward slope, it is downhill.</p> <p><i>Die part het 'n aaneenlopende afwaartse helling getoon, dit is afdraand.</i> ✓✓O</p> <p><b>OR/OF</b></p> <p>That part does not have many uphill.</p> <p><i>Daardie deel het nie baie opdraandes nie.</i></p> | <p>2O correct explanation</p> <p>(2)</p>                                                                        | MP<br>L4<br>E |
| *<br>2.2.5 | <p>Difference in height/<i>Verskil in hoogte</i></p> <p>✓RT ✓RT</p> <p>Difference/<i>Verskil</i> = 1 050 m – 900 m</p> <p>= 150 m</p> <p>✓O</p> <p>He is CORRECT. / <i>Hy is KORREK</i></p>                                                                                           | <p>1RT 1<sup>st</sup> correct value</p> <p>1RT 2<sup>nd</sup> correct value</p> <p>1O conclusion</p> <p>(3)</p> | MP<br>L4<br>M |
|            |                                                                                                                                                                                                                                                                                       |                                                                                                                 | [31]          |



| QUESTION/VRAAG 3 [31 MARKS/PUNTE] |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                         |              |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Q/V                               | Solution/Oplossing                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Explanation/Verduideliking                                                                                                                                                                                              | T&L          |
| *<br>3.1.1                        | $\checkmark$ MA<br>$= 14:13 - 12:55$<br>$\checkmark$ A<br>$= 1 \text{ hour } 18 \text{ minutes} / 1 \text{ uur } 18 \text{ minute}$<br>OR/OF 78 minutes<br>OR/OF 1,3 hours/uur                                                                                                                                                                                                                                                                                                          | 1MA subtracting time<br>1A simplification [1hr18min]<br><b>AO</b><br>(2)                                                                                                                                                | M<br>L2<br>M |
| *<br>3.1.2                        | Total height of 4 pillows/Totale hoogte van 4 kussings<br>$= 11 \text{ cm} \times 4$ $\checkmark$ MA<br>$= 44 \text{ cm}$ $\checkmark$ CA<br><br>Difference/Verskil<br>$\checkmark$ RT<br>$= 48 \text{ cm} - 44 \text{ cm}$<br>$= 4 \text{ cm}$ $\checkmark$ CA<br><br><b>OR/OF</b><br>$\checkmark$ RT $\checkmark$ MA $\checkmark$ MA<br>Difference = $48 \text{ cm} - 11 \text{ cm} - 11 \text{ cm} - 11 \text{ cm} - 11 \text{ cm}$<br>$= 4 \text{ cm}$ $\checkmark$ CA              | 1MA multiplying by 4<br>1CA simplification<br><br>1RT height<br>1CA simplification<br><br><b>OR/OF</b><br>1RT height<br>1MA subtracting 11 cm<br>1MA subtracting all the 11's<br>1CA simplification<br><b>AO</b><br>(4) | M<br>L2<br>E |
| (3.1.3)                           | Perimeter = 2 (length + width)/<br>Omtrek = 2 (lengte + breedte)<br>Perimeter/Omtrek = 2 (46 cm + 30 cm) $\checkmark$ SF<br><br>$= 2 (76 \text{ cm})$<br><br>$= 152 \text{ cm}$ $\checkmark$ CA<br><br>Total length for 4 bags/Totale lengte vir 4 sakke<br>$= 152 \times 4$ $\checkmark$ MA<br><br>$= 608 \text{ cm}$<br>$= \frac{608 \text{ cm}}{100}$<br>$= 6,08 \text{ m}$ $\checkmark$ C<br><br>$\therefore$ she must buy 6,5 m/ $\checkmark$ R Sy moet 6,5 m koop<br><b>OR/OF</b> | 1SF correct substitution<br><br>1CA simplification<br><br>1MA multiply by 4<br><br>1C simplification<br><br>1R correct rounding<br><b>OR/OF</b>                                                                         | M<br>L3<br>M |



| Q/V        | Solution/Oplossing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Explanation/Verduideliking                                                                                                                                                                                                                                               | T&L          |
|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
|            | $30 \text{ cm} \div 100 = 0,3 \text{ m}$<br>$46 \text{ cm} \div 100 = 0,46 \text{ m}$ ✓C<br>Perimeter/Omtrek = $2(0,3 \text{ m} + 0,46 \text{ m})$ ✓SF<br>$= 1,52 \text{ m}$ ✓CA<br>Total / Totaal = $1,52 \text{ m} \times 4$ ✓MCA<br>$= 6,08 \text{ m}$<br>$\therefore$ she must buy 6,5 m/ <i>Sy moet 6,5 m koop</i><br><b>OR/OF</b><br><b>Using ½ metre lengths/ Gebruik ½ metre lengtes</b><br>Perimeter/Omtrek = $2(46 \text{ cm} + 30 \text{ cm})$ ✓SF<br>$= 152 \text{ cm}$ ✓CA<br>Total length for 4 bags / <i>Totale lengte vir 4 sakke</i><br>$= 152 \times 4$ ✓MA<br>$= 608 \text{ cm}$<br>$\frac{1}{2} \text{ m} = 50 \text{ cm}$ ✓C<br>Number of half metre lengths / <i>Getal half-meter lengtes</i><br>$= 608 \text{ cm} \div 50 \text{ cm}$<br>$= 12,16$<br>$\approx 13$ ✓R | 1C metre<br>1SF correct substitution<br>1CA simplification<br>1MCA multiply by 4<br><br>1R correct rounding<br><b>OR/OF</b><br><br>1SF correct substitution<br>1CA simplification<br><br>1MA multiply by 4<br><br>1C to centimetre<br><br>1R correct rounding<br><br>(5) |              |
| *<br>3.2.1 | Circumference / <i>Omtrek</i><br>$= 3,142 \times 8 \text{ cm}$ ✓SF<br>$= 25,136 \text{ cm}$ ✓A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 1SF substitute diameter<br>1A simplification<br><b>NPR</b><br><b>AO</b><br>(2)                                                                                                                                                                                           | M<br>L2<br>E |
| 3.2.2      | Radius/ <i>Radius</i><br>$= \frac{8 \text{ cm}}{2}$ ✓MA<br>$= 4 \text{ cm}$ ✓A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 1MA concept of radius<br><br>1A simplification<br><b>NPU</b><br><b>AO</b><br>(2)                                                                                                                                                                                         | M<br>L1<br>E |



| Q/V   | Solution/Oplissing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Explanation/Verduideliking                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | T&L                         |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| 3.2.3 | <p>Area of a circle/Area/Oppervlakte van 'n sirkel</p> $\checkmark \text{SF}$ $= 3,142 \times (4 \text{ cm})^2$ $= 3,142 \times 16 \text{ cm}^2 \quad \checkmark \text{MCA}$ $= 50,272 \text{ cm}^2 \quad \checkmark \text{CA}$ <p>Area to be painted / Oppervlakte wat geverf moet word</p> $\text{Area} = 50,272 - 0,3142 = 49,9578 \text{ cm}^2 \quad \checkmark \text{CA}$ <p>Total area / Totale opp.= <math>36 \times 49,9578 \text{ cm}^2</math></p> $= 1\,798,4808 \text{ cm}^2. \quad \checkmark \text{MCA}$ <p>Total area in <math>\text{m}^2</math> / Totale opp.in <math>\text{m}^2</math></p> $= 1\,798,4808 \div 100^2$ $= 0,179848 \text{ m}^2. \quad \checkmark \text{C}$ <p><math>6 \text{ m}^2 = 1 \ell = 1000 \text{ ml}</math></p> $\checkmark \text{MA}$ <p><math>\dots \text{ m}^2 = 50 \text{ ml}</math></p> <p><math>0,3 \text{ m}^2 = 50 \text{ ml}</math></p> <p><math>0,3 \text{ m}^2 &gt; 0,179848 \text{ m}^2 \quad \checkmark \text{CA}</math></p> <p>Therefore 50 ml will be more than sufficient. / <math>\checkmark \text{O}</math><br/> <i>Daarom sal 50 ml meer as genoeg wees.</i></p> <p style="text-align: center;"><b>OR/OF</b></p> <p>Area of a circle/Area/Oppervlakte van 'n sirkel</p> $\checkmark \text{SF}$ $= 3,142 \times (4 \text{ cm})^2 \quad \checkmark \text{MCA}$ $= 50,272 \text{ cm}^2 \quad \checkmark \text{CA}$ <p>Area to be painted/Oppervlakte wat geverf moet word</p> $\text{Area} = 50,272 \text{ cm}^2 - 0,3142 \text{ cm}^2 = 49,9578 \text{ cm}^2 \quad \checkmark \text{CA}$ <p>Total area / Totale oppervlakte</p> $= 36 \times 49,9578 \text{ cm}^2 = 1\,798,4808 \text{ cm}^2. \quad \checkmark \text{MCA}$ $= 1\,798,4808 \div 100^2$ $= 0,179848 \text{ m}^2 \quad \checkmark \text{C}$ | <p><b>CA from Question 3.2.2</b></p> <p>1SF correct substitution</p> <p>1MCA squaring</p> <p>1CA simplification</p> <p>1CA difference</p> <p>1MCA multiply by 36</p> <p>1C dividing by 10 000 or <math>100^2</math></p> <p>1MA using ratio</p> <p>1CA comparing areas.</p> <p>1O verification</p> <p style="text-align: center;"><b>OR/OF</b></p> <p>1SF correct substitution</p> <p>1MCA squaring</p> <p>1CA simplification</p> <p>1CA difference</p> <p>1MCA multiply by 36</p> <p>1C dividing by 10 000 or <math>100^2</math></p> | <p>M</p> <p>L4</p> <p>M</p> |

| Q/V | Solution/Oplissing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Explanation/Verduideliking                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | T&L |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
|     | <p>Paint/ <i>verf</i><br/> <math>6 \text{ m}^2</math> with/<i>met</i> <math>1 \text{ l}</math><br/> <math>\therefore 0,17984808 \text{ m}^2</math> with /<i>met</i> <math>n \text{ l}</math></p> <p><math>n = \frac{0,17984808}{6} \text{ l}</math> ✓MCA<br/> <math>= 0,02997466 \text{ l}</math><br/> <math>\approx 30 \text{ ml}</math> ✓CA</p> <p>VALID / <i>GELDIG</i> ✓O<br/> <b>OR/OF</b></p> <p>Area of ONE circle/<i>Oppervlakte van EEN sirkel</i><br/> <math>= 3,142 \times (4 \text{ cm})^2</math> ✓SF<br/> <math>= 50,272 \text{ cm}^2</math> ✓MCA ✓CA</p> <p>Area to be painted/<i>Oppervlakte wat geverf moet word</i><br/> <math>= 50,272 \text{ cm}^2 - 0,3142 \text{ cm}^2 = 49,9578 \text{ cm}^2</math> ✓CA</p> <p><math>6 \text{ m}^2 : 1 \text{ l}</math><br/> <math>60\,000 \text{ cm}^2 : 1\,000 \text{ ml}</math> ✓C<br/> <math>49,9578 : ?</math></p> <p>Paint needed/ <i>Verf benodig</i> <math>\frac{49,9578 \times 1\,000}{60\,000}</math> ✓MCA<br/> <math>= 0,83263 \text{ ml}</math></p> <p>Paint for 36/ <i>Verf vir 36</i> <math>= 0,83263 \text{ ml} \times 36</math> ✓MCA<br/> <math>= 29,97 \text{ ml}</math> ✓CA</p> <p><math>\therefore</math> VALID / <i>GELDIG</i> ✓O<br/> <b>OR/OF</b></p> <p>Radius <math>= \frac{4 \text{ cm}}{100} = 0,04 \text{ m}</math> ✓SF</p> <p>Area of circle/ <i>Opp van sirkel</i> <math>= 3,142 \times (0,04)^2</math> ✓MCA<br/> <math>= 0,0050272 \text{ m}^2</math> ✓CA</p> <p>Area of circular hole/ <i>Opp van gaatjie</i> <math>= \frac{0,3142}{10\,000}</math> ✓C<br/> <math>= 0,0000314 \text{ m}^2</math></p> <p>Area to be painted <math>= 0,0050272 \text{ m}^2 - 0,00003142 \text{ m}^2</math><br/> <math>= 0,00499578 \text{ m}^2</math> ✓CA</p> <p><math>\therefore 0,00499578 \text{ m}^2 \times 36</math><br/> <math>= 0,17984808 \text{ m}^2</math> ✓MCA</p> <p>Amount of paint/<i>Hoeveelheid verf</i><br/> <math>= \frac{0,17984808}{6 \text{ l}} \times 1\,000 \text{ ml}</math> ✓MCA</p> <p><math>= 29,97468 \text{ ml} \approx 30 \text{ ml}</math> ✓CA<br/> <math>\therefore 30 \text{ ml}</math> is less than <math>50 \text{ ml}</math><br/>         VALID / <i>GELDIG</i> ✓O</p> | <p>1MCA using ratio<br/>         1CA paint needed<br/>         1O verification<br/> <b>OR/OF</b></p> <p>1SF correct substitution<br/>         1MCA squaring<br/>         1CA simplification</p> <p>1CA difference</p> <p>1C converting<br/>,</p> <p>1MCA using ratio</p> <p>1MCA multiply by 36<br/>         1CA paint needed<br/>         1O verification</p> <p><b>OR/OF</b></p> <p>1SF correct substitution<br/>         1MCA squaring<br/>         1CA simplification</p> <p>1C dividing by 10 000</p> <p>1CA difference</p> <p>1MCA multiply by 36</p> <p>1MCA using ratio<br/>         1CA paint needed<br/>         1O verification</p> |     |

| Q/V        | Solution/Opplossing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Explanation/Verduideliking                                                                                                                                                                                                                                                        | T&L          |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
|            | <p align="center"><b>OR/OF</b></p> <p>Area of a circle / <i>Oppervlakte van 'n sirkel</i><br/> <math>= 3,142 \times 4^2</math> ✓SF<br/> <math>= 3,142 \times 16</math> ✓MCA<br/> <math>= 50,272 \text{ cm}^2</math> ✓CA</p> <p>Area to be painted / <i>Oppervlakte wat geverf moet word</i><br/> Area / <i>Opp</i> = <math>50,272 - 0,3142</math><br/> <math>= 49,9578 \text{ cm}^2</math> ✓CA</p> <p><math>6 \text{ m}^2 / \ell = 60\,000 \text{ cm}^2 / \ell</math><br/> <math>= 60\,000 \text{ cm}^2 / 1\,000 \text{ m}\ell</math> ✓C</p> <p>Amount of paint for one tag /<br/> <i>Hoeveelheid van verf per houtplaatjie</i><br/> <math>= 49,9578 \div 60\,000 \times 1\,000</math> ✓MCA<br/> <math>= 0,83263 \text{ m}\ell</math></p> <p>Paint for 36 tags/ <i>Verf vir 36 houtplaatjies</i><br/> <math>0,83263 \text{ m}\ell \times 36</math> ✓MCA<br/> <math>= 29,97468 \text{ m}\ell</math> ✓CA</p> <p>VALID / <i>GELDIG</i> ✓O</p> | <p align="center"><b>OR/OF</b></p> <p>1SF correct substitution<br/> 1MCA squaring<br/> 1CA simplification</p> <p>1CA difference</p> <p>1C conversion</p> <p>1MCA using ratio</p> <p>1MCA multiply by 36<br/> 1CA paint needed</p> <p>1O verification</p> <p align="right">(9)</p> |              |
| *<br>3.3.1 | <p>Volume of a cube = side <math>\times</math> side <math>\times</math> side/<br/> <i>Volume van 'n kubus = sy <math>\times</math> sy <math>\times</math> sy</i><br/> ✓SF ✓SF<br/> <math>2\,744 \text{ cm}^3 = \text{side} \times \text{side} \times \text{side}</math><br/> <math>(\text{side})^3 = 2\,744 \text{ cm}^3</math> ✓MA<br/> <math>14 \times 14 \times 14 = 2\,744</math><br/> Side/Sy = 14 cm ✓CA</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <p>1SF substitution number<br/> 1SF cube unit<br/> 1MA change subject of the formula</p> <p>1CA simplification</p> <p align="right">(4)</p>                                                                                                                                       | M<br>L3<br>M |
| 3.3.2      | <p><math>8 + 7 = 15</math><br/> <math>P = \frac{15}{35}</math> ✓A<br/> <math>= 0,42857...</math><br/> <math>\approx 0,43</math> ✓CA</p> <p align="center"><b>OR/OF</b></p> <p><math>P = \frac{8}{35} + \frac{7}{35}</math> ✓A<br/> <math>= 0,22857... + 0,2</math> ✓A<br/> <math>= 0,42857...</math><br/> <math>\approx 0,43</math> ✓CA</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <p>1A numerator<br/> 1A denominator<br/> 1CA simplification</p> <p align="center"><b>OR/OF</b></p> <p>1A denominator<br/> 1A writing as decimals<br/> 1CA simplification<br/> <b>NPR</b></p> <p align="right">(3)</p>                                                             | P<br>L2<br>E |
|            | SA EXAM PAPERS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | [31]                                                                                                                                                                                                                                                                              |              |

| <b>QUESTION 4 [29 MARKS]</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                         |               |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| <b>Q/V</b>                   | <b>Solution/Opplossing</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>Explanation/Verduideliking</b>                                                                                                                                                       | <b>T/L</b>    |
| *<br>4.1.1                   | Kerosene or lamp oil<br>/Keroseen of Lampolie ✓✓ RT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 2RT correct product<br>(2)                                                                                                                                                              | MP<br>L1<br>E |
| 4.1.2                        | Gasoline or petrol/<br>Brandstof of Petrol ✓✓ RT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 2RT correct product<br>(2)                                                                                                                                                              | MP<br>L1<br>E |
| *<br>4.1.3                   | $^{\circ}\text{C} = \frac{(^{\circ}\text{F} - 32)}{1,8}$ $300^{\circ}\text{C} = \frac{(^{\circ}\text{F} - 32)}{1,8}$ $^{\circ}\text{F} = 1,8 \times 300 + 32$ $= 572$                                                                                                                                                                                                                                                                                                                                                                | 1RT correct value 300<br>1SF substituting information correctly<br>1S changing subject of the formula<br>1CA simplification<br><b>AO</b><br>(4)                                         | M<br>L3<br>M  |
| *<br>4.1.4                   | Surface area of an open cylinder/<br>Buite-oppervlakte van 'n oop silinder<br>$= 3,142 \times \text{diameter} \times \text{height}$ $= 3,142 \times \text{deursnee} \times \text{hoogte}$ $= 3,142 \times 6 \text{ m} \times 54 \text{ m}$ $= 1\,018,008 \text{ m}^2$ Area of pipes/Oppervlakte van pype<br>$= \frac{2,5}{100} \times \frac{1\,018,008}{1}$ $= 25,4502 \text{ m}^2$ Total Surface Area/Totale buiteoppervlakte<br>$= 1\,018,008 \text{ m}^2 - 25,4502 \text{ m}^2 + 150,816 \text{ m}^2$ $= 1\,143,3738 \text{ m}^2$ | 1SF substitution<br>1CA simplification<br>1MCA percentage calculation<br>1CA simplification<br>1MCA subtracting pipe area<br>1MA adding A + C<br>1CA total surface area<br><b>OR/OF</b> | M<br>L3<br>D  |



| Q/V        | Solution/Oplossing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Explanation/Verduideliking                                                                                                                                                                                             | T/L          |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
|            | <p>Surface area of an open cylinder/<i>Buite-oppervlakte van 'n oop silinder</i></p> $SA = 3,142 \times \text{diameter} \times \text{height}/$ $BO = 3,142 \times \text{deursnee} \times \text{hoogte}$ $= 3,142 \times 6 \text{ m} \times 54 \text{ m} \quad \checkmark \text{ SF}$ $= 1\,018,008 \text{ m}^2 \quad \checkmark \text{ CA}$ <p>Excluding area of pipes/<i>Oppervlakte van pype uitgesluit</i></p> $\checkmark \text{ MA} \quad \checkmark \text{ MCA}$ $\text{Area (excluding)/Opp(uitgesluit)} = \frac{97,5}{100} \times \frac{1\,018,008}{1}$ $= 992,5578 \quad \checkmark \text{ CA}$ $\text{Total SA/Totale BO} = 992,5578 \text{ m}^2 + 150,816 \text{ m}^2 \quad \checkmark \text{ MA}$ $= 1\,143,3738 \text{ m}^2. \quad \checkmark \text{ CA}$ | <p>1SF substitution</p> <p>1CA simplification</p> <p>1MA less 2,5%</p> <p>1MCA percentage calculation</p> <p>1CA simplification</p> <p>1MA adding A + C</p> <p>1CA total surface area</p> <p><b>NPR</b></p> <p>(7)</p> |              |
| *<br>4.2.1 | <p>Number of bricks in 1 row of a double brick wall<br/><i>Getal stene in een ry van 'n dubbelsteenmuur</i></p> $= 19 \quad \checkmark \checkmark \text{ RT}$ <p>Number of bricks for 1 garage door<br/><i>Getal stene vir 1 motorhuis deur</i></p> $= 19 \times 20 \quad \checkmark \text{ A}$ $= 380$ <p>Total number of bricks needed /<i>Totale getal stene nodig</i></p> $= 380 \times 2 \quad \checkmark \text{ MCA}$ $= 760$ $\checkmark \text{ R}$ <p><math>\therefore</math> 2 Pallets of bricks /<i>Stapelborde met stene</i></p> <p style="text-align: center;"><b>OR/OF</b></p>                                                                                                                                                                            | <p>2RT bricks in double row</p> <p>1A number of layers</p> <p>1MCA doubling</p> <p>1R number of pallets</p> <p style="text-align: center;"><b>OR/OF</b></p>                                                            | M<br>L2<br>M |



| Q/V   | Solution/Oplossing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Explanation/Verduideliking                                                                                                                                                    | T/L              |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
|       | $\checkmark$ RT $\checkmark$ RT<br>Single line wall/ <i>Enkelmuur</i> = $20 \times 10$<br>$= 200$ bricks/ <i>stene</i><br>$\checkmark$ CA<br>Double line wall/ <i>Dubbelmuur</i> = $2 \times 200 = 400$ bricks<br>To cover space of two garage doors:/<br><i>Om die spasie van twee motorhuisdeure te dek</i><br>Number of bricks/ <i>Getal stene</i><br>$= 2 \times 400 \checkmark$ MCA<br>$= 800$<br>Number of pallets needed/<br><i>Stapelborde met stene benodig</i><br>$= 2 \checkmark$ R                                                                                                                                                                                    | 1RT bricks (height)<br>1RT bricks (row)<br>1CA bricks on double walls<br>1MCA doubling<br>1R number of pallets<br>(5)                                                         |                  |
| 4.2.2 | $\checkmark$ MA $\checkmark$ SF<br>Area of 2 doors/ <i>Opp van 2 deure</i> = $2 \times 2,13 \times 3$<br>$= 12,78 \text{ m}^2 \checkmark$ A<br>Labour cost/ <i>Arbeidskoste</i> = $12,78 \text{ m}^2 \times \text{R}500$<br>$= \text{R } 6\,390 \checkmark$ CA<br>Brick cost/ <i>Steenkoste</i> = $2 \times 525 \times \text{R}6,45$<br>$= \text{R } 6\,772,50 \checkmark$ CA<br>COST = Other material + Labour + Bricks cost/<br><i>KOSTE = Ander materiaal + Arbeid + Steenkoste</i><br>Total cost/ <i>Totale koste</i> = $\text{R}2\,000 + \text{R}6\,390 + 6\,772,50$<br>$= \text{R}15\,162,50 \checkmark$ CA<br>Not VALID/ <i>Nie GELDIG.</i> $\checkmark$ O<br><b>OR/OF</b> | <b>CA pallets from 4.2.1</b><br>1MA doubling<br>1SF correct values<br>1A simplification<br>1CA labour cost<br>1CA brick cost<br>1CA amount<br>1O verification<br><b>OR/OF</b> | M/Fin<br>L4<br>M |



| Q/V   | Solution/Oplossing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Explanation/Verduideliking                                                                                                                                                                                                                                                                                                                                  | T/L          |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
|       | <p>For one door/ <i>Vir een deur</i><br/> Area/ <i>oppervlakte</i> = <math>2,13 \text{ m} \times 3 \text{ m}</math> ✓ SF<br/> = <math>6,39 \text{ m}^2</math> ✓ A<br/> Labour cost/<i>Arbeidskoste</i> = <math>6,39 \text{ m}^2 \times \text{R}500</math><br/> = <math>\text{R}3\,195</math> ✓ MCA<br/> ∴ for two / <i>vir twee</i> = <math>2 \times \text{R}3\,195</math><br/> = <math>\text{R}6\,390</math> ✓ CA<br/> Cost per pallet/ <i>koste per stapelbord</i> = <math>\text{R}6,45 \times 525</math><br/> = <math>\text{R}3\,386,25</math><br/> ∴ for two / <i>vir twee</i> = <math>2 \times \text{R}3\,386,25</math><br/> = <math>\text{R}6\,772,50</math> ✓ CA<br/> Total cost/<i>Totale koste</i> = <math>\text{R}2\,000 + \text{R}6\,390 + \text{R}6\,772,50</math><br/> = <math>\text{R}15\,162,50</math> ✓ CA<br/> Not VALID/<i>Nie GELDIG</i>. ✓ O</p> <p style="text-align: center;"><b>OR/OF</b></p> <p style="text-align: right;">✓ SF</p> <p>Area of 2 doors / <i>Opp van 2 deure</i> = <math>2 \times 2,13 \times 3</math><br/> = <math>12,78 \text{ m}^2</math> ✓ MA<br/> <math>\approx 13 \text{ m}^2</math> (cost per <math>\text{m}^2</math>)<br/> ✓ CA</p> <p>Labour Cost / <i>Arbeidskoste</i> = <math>13 \times \text{R}500</math><br/> = <math>\text{R}6\,500</math> ✓ CA</p> <p>Brick cost / <i>Steen koste</i> = <math>2 \times 525 \times \text{R}6,45</math><br/> = <math>\text{R}6\,772,50</math> ✓ CA</p> <p>Total Cost / <i>Totale Koste</i> = <math>\text{R}6\,500 + \text{R}6\,772,50 + \text{R}2\,000</math><br/> = <math>\text{R}15\,272,50</math> ✓ CA</p> <p>Not VALID / <i>Nie GELDIG nie</i> ✓ O</p> | <p>1SF correct values<br/> 1A simplification<br/> 1MCA labour cost<br/> 1CA doubling<br/> 1CA brick cost<br/> 1CA amount<br/> 1O verification</p> <p><b>OR/OF</b></p> <p>1SF substitution<br/> 1MA doubling<br/> 1CA simplification<br/> 1CA labour cost<br/> 1CA brick cost<br/> 1CA amount<br/> 1O verification</p> <p style="text-align: right;">(7)</p> |              |
| 4.2.3 | <p style="text-align: center;">✓✓ O</p> <p>To be easily lifted by a fork lift./<i>Om maklik met 'n vorkhyser op te lig word.</i></p> <p style="text-align: center;"><b>OR/OF</b></p> <p>Storage/ loading / transportation are made easier<br/> /<i>Berging/ laai / vervoer word vergemaklik.</i></p> <p style="text-align: center;"><b>OR/OF</b></p> <p>It keeps them from breaking / <i>Dit keer dat hulle breek</i></p> <p style="text-align: center;"><b>OR/OF</b></p> <p>It makes counting easier/<i>Dit is makliker om te tel</i><br/> To protect the bricks from damage/ <i>Dit beskerm die stene van beskadiging</i><br/> To keep it tight and compact/ <i>Om die stene stewig en kompak te hou</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <p>2O reason</p> <p style="text-align: right;">(2)</p>                                                                                                                                                                                                                                                                                                      | M<br>L4<br>E |
|       | SA EXAM PAPERS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | [29]                                                                                                                                                                                                                                                                                                                                                        |              |

| QUESTION 5 [33 MARKS] |                                                                                                                                                                                                                                                             |                                                                                                             |               |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|---------------|
| Q/V                   | Solution/Oplossing                                                                                                                                                                                                                                          | Explanation/Verduideliking                                                                                  | T/L           |
| 5.1.1                 | ✓RT<br>Adelaide and/en Melbourne                                                                                                                                                                                                                            | 1RT 1 <sup>st</sup> city<br>1RT 2 <sup>nd</sup> city<br>(2)                                                 | MP<br>L1<br>E |
| *<br>5.1.2            | ✓RT ✓RT<br>Aug, Sep, Oct, Nov ✓RT<br><i>Aug, Sep, Okt, Nov</i>                                                                                                                                                                                              | 1RT first correct month<br>1RT second correct month<br>1RT ALL correct months<br>(3)                        | MP<br>L1<br>M |
| 5.1.3                 | ✓RT<br>$14\,655 - (738 + 1\,062 + 922 + 1\,705 + 2\,850 + 1\,871 + 2\,811)$<br>$= 14\,655 - 11\,959$ ✓MCA<br>$= 2\,696$ km ✓CA                                                                                                                              | 1RT all correct values<br>1MCA subtracting<br>1CA simplification<br><b>AO</b><br>(3)                        | MP<br>L2<br>M |
| *<br>5.1.4            | Tasmania./Tasmanië ✓✓RT                                                                                                                                                                                                                                     | 2RT correct state<br>(2)                                                                                    | MP<br>L1<br>E |
| 5.1.5                 | Distance/Afstand = Speed × time<br>$1\,705 \text{ km} = s \times 20 \text{ h } 40 \text{ min}$ ✓SF<br>$1\,705 \text{ km} = s \times 20,67 \text{ h}$ ✓C<br>$\text{Speed/Speed} = \frac{1\,705 \text{ km}}{20,67 \text{ h}}$ ✓S<br>$= 82,5 \text{ km/h}$ ✓CA | 1SF substitution<br>1C converting to hours<br><br>1S change subject of formula<br>1CA simplification<br>(4) | M<br>L2<br>M  |
| 5.2.1                 | ✓RT<br>$1\,142 \text{ feet/voet} = 348 \text{ m}$ ✓RT<br>$1 \text{ foot/voet} = \frac{348}{1\,142}$<br>$= 0,304728546$<br>$1 \text{ foot/voet} \approx 0,305 \text{ m}$ ✓A                                                                                  | 1RT 1 142<br>1RT 348<br><br>1A 0,305<br>(3)                                                                 | M<br>L2<br>M  |
| *<br>5.2.2            | Uluru : Eiffel Tower : Big Ben/<br><i>Uluru : Eiffeltoring : Big Ben</i><br><br>$348 : 324 : 96$ ✓RT ✓A<br><br>$= 29 : 27 : 8$ ✓✓CA                                                                                                                         | 1RT correct values<br>1A correct order<br><br>2CA simplified ratio<br>(4)                                   | M<br>L2<br>E  |



| Q/V               | Solution/Oplossing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Explanation/Verduideliking                                                                                                                                                                                                                                              | T/L           |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| *<br>5.3.1        | $P = 22,5\% \checkmark\checkmark A$<br><br><b>OR/OF</b><br><br>$P = \frac{1\,729\,742}{7\,688\,220} \checkmark\checkmark A$<br><br>$= 0,224986... \text{ or } 22,5\%$                                                                                                                                                                                                                                                                                                                                       | 2A correct probability<br><br><br>(2)                                                                                                                                                                                                                                   | P<br>L2<br>E  |
| 5.3.2             | $\text{Area of island/Opp van eiland} = \frac{32\,159}{64\,519} \checkmark RT$<br>$\checkmark RT$<br><br>$= 0,498 \approx 0,5 \checkmark CA$<br><br><b>OR/OF</b><br><br>$\text{Half of Tasmania / Helfte van Tasmanië}$<br>$\checkmark RT \frac{1}{2} \times 32\,159 = 16\,079,5 \text{ km}^2 \checkmark MA$<br>$\text{Islands / Eilande} = 32\,159 \text{ km}^2 \checkmark RT$<br><br>$\checkmark RT \quad \checkmark RT \quad \text{OR/OF}$<br>$64\,519 : 32\,159$<br>$\approx 2 : 1 \quad \checkmark CA$ | 1RT area of islands<br>1RT area of Tasmania<br><br>1CA simplification<br><br><b>OR/OF</b><br><br>1RT Tasmania area<br>1MA simplification<br><br>1RT island area<br><br><b>OR/OF</b><br><br>1RT area of islands<br>1RT area of Tasmania<br>1CA simplification<br><br>(3) | MP<br>L4<br>M |
| *<br>5.3.3<br>(a) | $\text{Population density/Bevolkingsdigtheid}$<br>$= \frac{454\,499}{2\,358} \checkmark RT$<br>$\checkmark RT$<br>$= 192,74...$<br><br>$\approx 193 \checkmark R$                                                                                                                                                                                                                                                                                                                                           | 1RT correct 454 499<br>1RT correct area 2 358<br><br>1R simplification rounded up<br>(3)                                                                                                                                                                                | M<br>L3<br>D  |
| *<br>5.3.3<br>(b) | $\text{Land \% area/Land \% opp} = \frac{2\,358}{7\,688\,220} \times 100\% \checkmark RT$<br>$\checkmark RT$<br>$= 0,0306... \% \checkmark CA$<br>$\text{Rounds off to zero/Rond af na nul.} \checkmark O$                                                                                                                                                                                                                                                                                                  | 1RT correct 2 358<br>1RT 7 688 220<br>1CA simplification<br>1O opinion<br><br>(4)                                                                                                                                                                                       | M<br>L4<br>D  |
|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | [33]                                                                                                                                                                                                                                                                    |               |

