



**Western Cape  
Government**

Education

**Directorate: Curriculum FET**

**TERM 2 REVISION MATERIAL**

**GRADE 12**

**SUBJECT: MATHEMATICAL LITERACY**

**MEMORANDUM**

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

## FINANCE / FINANSIES

### QUESTION / VRAAG 1

| Q/V   | Solution/Oplissing  | Explanation/Verduideliking            |
|-------|---|---------------------------------------|
| 1.1.1 | Marco van der Merwe ✓✓RT  | 2RT reading from table                |
| 1.1.2 | $\frac{R139,80}{2} \checkmark \text{MA}$ $= R69,90 \checkmark \text{CA}$  | 1MA divide by 2<br>1CA simplification |
| 1.1.3 | 21:07 – 18:45 ✓MA ✓A<br>= 2 hours and 22 minutes/2 ure en 22 minute   | 1MA subtraction<br>1A time duration   |
| 1.1.4 | No/Nee ✓✓RT   | 2RT reading from table                |
| 1.2.1 | ✓A<br><b>Interest rate</b> – the percentage used to determine the amount of interest<br>✓A<br><b>Rentekoers</b> – die persentasie wat gebruik om die hoeveelheid rente te bereken | 1A percentage<br>1A determine amount  |
| 1.2.2 | R69 ✓✓RT  | 2RT reading from table                |
| 1.2.3 | R2 173,89 – R1 447,30 ✓M<br>= R726,59 ✓A  | 1M subtraction<br>1A amount           |

|       |   |  |
|-------|---|--|
| 1.2.4 | $\frac{60}{12} \checkmark \text{MA}$<br>= 5 years/jaar $\checkmark \text{CA}$   | 1MA divide by 12<br>1CA simplification                     |
| 1.3.1 | 18872,05 – 3472,08 $\checkmark \text{M}$<br>= R15 399,97 $\checkmark \text{CA}$   | 1M Subtracting 3472,08<br>1 CA                             |
| 1.3.2 | (a) R11,10 $\checkmark \text{RT} \checkmark \text{A}$   | 1 RT<br>1 A  |
|       | (b) $4,54 + 1,41 \times 5,00 \checkmark \text{M}$<br>= 4,54 + 7,05 $\checkmark \text{M}$<br>= 11,59 $\checkmark \text{CA}$  | 1M<br>1M<br>1CA  |
|       | (c) 14665,69 - 95,45 $\checkmark \text{MA}$<br>= R14 570,24 $\checkmark \text{CA}$  | 1 M subtract 95,45<br>1 CA                                 |
| 1.4.1 | $\text{Balloon payment} = \frac{179900 \times 20}{100} \checkmark \text{M}$<br>= R35 980,00 $\checkmark \text{CA}$  | 1 M calculate %<br>1 CA                                    |
| 1.4.2 | 179900 – 15000 + 1207,50 $\checkmark \text{M} \checkmark \text{M}$<br>= 166107,50   | 1M subtracting deposit<br>1 M Adding initiation fee        |
| 1.4.3 | $R3492,27 \times 60 + 15000,00 + 35980,00 \checkmark \text{M} \checkmark \text{M}$<br>= 209536,20 + 15000,00 + 35980,00 $\checkmark \text{S}$<br>= R260 516,20 $\checkmark \text{CA}$ | 1M multiplying 60<br>1M Adding<br>1S Simplification<br>1CA |
| 1.4.4 | $179900 \times 1,0635 \times 1,0635 \checkmark \text{M} \checkmark \text{M}$<br>= R203 472,70 $\checkmark \text{CA}$  | 1M multiplying<br>1M multiplying<br>1CA                    |

## QUESTION / VRAAG 2

|       |  |   |
|-------|--|---|
| 2.1.1 | 9 months/maande $\checkmark \checkmark \text{RT}$  | 2RT number of months                                  |
| 2.1.2 | R113 000 $\checkmark \checkmark \text{RT}$   | 2RT correct amount<br><b>(omitting 000 = 0 marks)</b> |
| 2.1.3 | $\checkmark \text{MA}$<br>R(4 001 + 2 195 + 2 173 + 2 794 + 1 735 + 910)'000<br>= R13 808 000 $\checkmark \text{CA}$ | 1MA addition<br>1CA simplification                    |
| 2.1.4 | R2 195 000 – R1 994 000 $\checkmark \text{MA}$<br>= R201 000 $\checkmark \text{CA}$                                  | 1MA subtraction<br>1CA simplification                 |

|       |  |  |
|-------|--|--|
| 2.1.5 | $\frac{10,5}{100} \times R685\ 000$ $= R71\ 925$ $\approx R72\ 000$  | 1MA multiply by percentage<br><br>1CA simplification<br>1R rounding  |
| 2.1.6 | 3  | 2RT number of persons  |
| 2.1.7 | Prof. Schoonwinkel   | 2RT correct person   |
| 2.1.8 | $\frac{1}{6} \times 100\%$ $= 16,6666\dots$ $= 16,67\%$  | 1A 1 out of 6<br><br>1MA $\times 100\%$<br><br>1CA probability   |
| 2.1.9 | $\text{Interest/Rente} = \frac{9,5}{100} \times R155\ 000 \times 2$ $= R29\ 450$<br>$\text{Totale bedrag/Total amount} = R155\ 000 + R29\ 450$ $= R184\ 450$   | 1MA calculating 9,5%<br>1MA $\times 2$<br>1CA simplification<br>1MA adding interest<br><br>1CA simplification  |
| 2.2.1 | R1 999   | 2RT correct amount   |
| 2.2.2 | Brochures, files, magazines and calendars/<br><i>Brosjures, lêers, tydskrifte en kalenders</i>   | 2A items<br>(Only 3 or less items = 1 mark)  |
| 2.2.3 | $R1\ 999 \times 1,14$ $= R2\ 278,86$<br>$R2\ 298,85 - R2\ 278,86$ $= R19,99$<br><b>OR/OF</b><br>$R1\ 999 + \left(\frac{14}{100} \times R1\ 999\right)$ $= R2\ 278,86$<br>$R2\ 298,85 - R2\ 278,86$ $= R19,99$<br><b>OR/OF</b><br>$15\% - 14\% = 1\%$ $R1\ 999 \times \frac{1}{100}$ $= R19,99$ | 1MA multiply by 1,14<br>1CA simplification<br><br>1CA simplification<br><b>OR</b><br>1MA adding 14%<br>1A amount<br><br>1CA simplification<br><b>OR</b><br>1MA subtracting %<br>1MA calculating 1%<br>1CA simplification |

|       |   |   |
|-------|---|---|
| 2.2.4 | $\checkmark$ RT<br>$R1\ 148,85 \div 5\ 000\ \checkmark$ M<br>$= R0,23\ \checkmark$ CA   | 1RT reading from table<br>1M divide by 5 000<br>1CA simplification  |
| 2.2.5 | $\checkmark$ MA $\checkmark$ MA<br>$R1\ 148,85 + (R343,85 \times 2) + R3\ 448,85 + R918,85$<br>$= R6\ 204,25\ \checkmark$ CA<br><br>$\checkmark$ M $\checkmark$ M<br>$R6\ 204,25 - \left(\frac{25}{100} \times R6\ 204,25\right)$<br>$= R4\ 653,19\ \checkmark$ CA  | 1MA multiply by 2<br>1MA addition<br>1CA simplification<br>1M subtraction<br>1M amount discount<br>1CA simplification   |
| 2.3.1 | $Deposito = \frac{10}{100} \times 49\ 999,99\ \checkmark$ M<br>$= R4\ 999,99\ \checkmark$ CA<br>$= R5\ 000$<br><br><b>OR</b><br>$Deposito = 76\ 353,12 - 71\ 353,13\ \checkmark$ M<br>$= R4\ 999,99\ \checkmark$ CA<br><br><b>OR</b><br>$Deposito = (49\ 999,99 + 1000 + 500 + 375) - 46\ 875\ \checkmark$ M<br>$= R4\ 999,99\ \checkmark$ CA   | 1M multiplying by 10%<br>1CA answer<br>NPR<br><br>1M subtracting correct values<br>1CA answer   |
| 2.3.2 | Credit is obtaining goods and services before payment $\checkmark$ A and payment will be done later on agreement including interest. $\checkmark$ A<br><i>Krediet is wanneer goedere en dienste verkry word voordat betaling gedoen word <math>\checkmark</math>A en die betaling met rente <math>\checkmark</math>A word later gedoen volgens die ooreenkoms.</i>  | 1A goods before payment<br>1A payment with interest<br>1A goedere voor betaling<br>1A betaling met rente  |
| 2.3.3 | $Interest / Rente = \frac{10\ 078,13}{24}\ \checkmark$ M<br>$= R419,92\ \checkmark$ A<br><br><b>OR</b><br>$Interest / Rente = \frac{10,75\%}{12} \times 46\ 875\ \checkmark$ M<br>$= R\ 419,92\ \checkmark$ A   | 1M division<br>1A answer<br>OR<br>1M dividing % by 12 and multiply by 46 875<br>1A answer   |
| 2.3.4 | 1/8/2021 $\checkmark\checkmark$ A   | 2A correct date   |
| 2.3.5 | $VAT / BTW = R114\ 400 - \frac{100}{115} \times R14\ 400\ \checkmark$ M<br>$= 14\ 400 - 12\ 521,74\ \checkmark$ M<br>$= R1\ 878,26\ \checkmark$ A<br><br><b>OR</b><br>$Insurance\ amount = \frac{14\ 400}{1,15}\ \checkmark$ M<br>$= 12\ 521,74$<br>$VAT / BTW = 14\ 400 - 12\ 521,74\ \checkmark$ M<br>$= R1\ 878,26\ \checkmark$ A<br><br><b>OR</b><br>$VAT / BTW = \frac{14\ 400}{115\%} \times 15\%\ \checkmark$ M<br>$= R1\ 878,26\ \checkmark$ A $\checkmark$ A | 1M amount exclusive of VAT<br>1M subtraction<br>1A answer<br><br>1M divide by 1,15<br><br>1M subtraction<br>1A answer<br><br>1M working with ratio %<br>2A answer |

**QUESTION / VRAAG 3**

|              |   |   |
|--------------|---|---|
| <p>3.1</p>   | <p>Withdrawal fee of R20 000 at Bank A<br/> <math>= R5,95 + 0,015 \times R20\ 000</math> ✓ SF<br/> <math>= R305,95</math> ✓ CA<br/>                 Fees for 4 withdrawals: <math>R305,95 \times 4</math> ✓ M<br/> <math>= R1\ 223,80</math> ✓ CA<br/>                 Withdrawal fee for R20 000 at Bank B<br/> <math>= R4,00 + 1,25\% \times R20\ 000</math><br/> <math>= R254</math> ✓ CA<br/>                 Fees for 4 withdrawals = <math>R254 \times 4</math><br/> <math>= R1\ 016</math> ✓ CA<br/>                 Difference in fees = <math>R1\ 223,80 - R1\ 016</math><br/> <math>= R207,80</math> ✓ CA<br/>                 Statement is valid ✓ O<br/> <b>OR</b><br/>                 Withdrawal fee of R20 000 at Bank A<br/> <math>= R5,95 + 0,015 \times R20\ 000</math> ✓ SF<br/> <math>= R305,95</math> ✓ CA<br/>                 Withdrawal fee for R20 000 at Bank B<br/> <math>= R4,00 + 1,25\% \times R20\ 000</math><br/> <math>= R254</math> ✓ CA<br/>                 Difference in fees = <math>R305,95 - R254</math> ✓ MCA<br/> <math>= R51,95</math> ✓ CA<br/>                 Saving on 4 withdrawals = <math>R51,95 \times 4</math> ✓ M<br/> <math>= R207,80</math> ✓ CA<br/>                 Statement is valid ✓ O</p> | <p>1SF substituting<br/>                 1CA weekly charges<br/>                 1M multiplying by 4<br/>                 1CA fees for 4<br/>                 withdrawals<br/> <br/>                 1CA weekly charges<br/>                 1CA fees for 4<br/>                 withdrawals<br/>                 1CA difference<br/>                 1O conclusion<br/> <br/> <b>OR</b><br/>                 1SF substituting<br/>                 1CA weekly charges<br/>                 1CA weekly charges<br/>                 1MCA calculating the<br/>                 difference<br/>                 1CA difference<br/>                 1M fees for 4<br/>                 withdrawals<br/>                 1CA saving<br/>                 1O conclusion</p> |
| <p>3.2.1</p> | <p><math>\frac{20}{100} \times R800\ 000 = R160\ 000</math> ✓ CA<br/> <br/> <math>R800\ 000 - R160\ 000</math> ✓ MCA<br/> <math>= R640\ 000</math> ✓ CA<br/> <b>OR</b><br/>                 ✓ M ✓ MA<br/> <math>80\% \times R800\ 000</math><br/> <math>= R640\ 000</math> ✓ CA</p>   | <p>1A calculating deposit<br/>                 1MCA subtracting<br/>                 deposit<br/>                 1CA answer<br/> <br/>                 1M calculating 80%<br/>                 1MA multiplying by<br/>                 R800 000<br/>                 1CA answer</p>  |
| <p>3.2.2</p> | <p><math>\frac{6\ 176,14}{6\ 606,01} \times 100</math> ✓ MA<br/> <math>= 93,49\%</math><br/> <math>\approx 93\%</math> ✓ R</p>  | <p>1MA calculating %<br/> <br/>                 1R nearest %</p>  |
| <p>3.2.3</p> | <p>✓ RT<br/> <math>\frac{13\ 762,10}{60\%} = R22\ 930,83</math> ✓ CA<br/>                 ✓ M<br/>                 His claim was not correct. ✓ O</p>   | <p>1RT calculating rate<br/>                 1M dividing by 60%<br/>                 1CA answer<br/> <br/>                 1O opinion</p>   |

|       |   |  |
|-------|---|--|
| 3.2.4 | There was a 1% discount because he's a GEPF member. ✓✓O<br><br><b>OR</b><br>Government employees get 1% discount.   | 2O opinion   |
| 3.2.5 | $\frac{640\,000,00}{1000} \times 9,65 = R6\,176,00$ ✓SF ✓RT ✓CA<br><br>No, the instalment is 14 cents more. ✓O<br><br><b>OR</b><br>No, the instalment was rounded off to the nearest rand. ✓O | 1SF substitution into formula<br>1RT correct factor from table<br>1CA answer<br>1O opinion |

## MAPS AND PLANS / KAARTE EN PLANNE

### QUESTION / VRAAG 1

|       |  |   |
|-------|--|---|
| 1.1.1 | Lynwood <b>OR/OF</b> Roper Street/ <i>Straat</i> ✓✓RT  | 2RT street  |
| 1.1.2 | South West/ <i>Suid-Wes</i> ✓✓RT   | 2RT direction   |
| 1.1.3 | Waterkloof ✓✓RT  | 2RT neighbourhood/area  |
| 1.1.4 | ✓A ✓A<br>Florence Ribeiro/Nicholson/Justice Mahomed  | 1A Florence Ribeiro<br>1A Nicholson/Justice Mahomed   |
| 1.1.5 | <ul style="list-style-type: none"> <li>From entrance of main campus travel west in Lynnwood/<i>Vanaf die hoofkampus se ingang, ry in 'n westelike rigting in Lynnwood</i> ✓A</li> <li>Turn left at first traffic light, continue pass Magnolia Dall/<i>Draai links by eerste verkeerslig, hou aan verby Magnolia Dal</i> ✓A</li> <li>Turn left in Florence Ribeiro/<i>Draai links in Florence Ribeiro</i> ✓A</li> <li>Continue with Florence Ribeiro and then turn right into George Storrar Drive/<i>Hou aan met Florence Ribeiro en draai dan regs in George Storrarstraat</i></li> <li>Turn right in Leyds street and then first entrance on the left/<i>Draai regs in Leydsstraat en dan eerste ingang op linkerkant</i> ✓A</li> </ul> | 1A westerly direction in Lynnwood<br><br>1A left at traffic light and pass Magnolia Dell<br><br>1A turn left in Florence Ribeiro<br><br>1A turn right in George Storrar<br><br>1A turn right in Leyds |
| 1.1.6 | 6 ✓✓RT   | 2RT traffic lights  |

|       |  |   |   |
|-------|--|---|---|
| 1.1.7 | $\begin{aligned} \text{Distance/Afstand} &= (30 \text{ mm} \times 50\,000) \div 1\,000\,000 \\ &= 1\,500\,000 \text{ mm} \div 1\,000\,000 \\ &= 1,5 \text{ km} \end{aligned}$  | $\checkmark$ M $\checkmark$ MA<br>$\checkmark$ CA $\checkmark$ A  | 1M multiply by scale<br>1MA division by 1 000<br>1CA simplification<br>1A correct unit  |
| 1.2.1 | N1 and N3  | $\checkmark\checkmark$ A  | 2A answer   |
| 1.2.2 | South  | $\checkmark\checkmark$ A  | 2A answer   |
| 1.2.3 | Woodmead, Sunninghill, Wynberg   | $\checkmark$ A $\checkmark$ A $\checkmark$  | 2A answer   |
| 1.2.4 | <b>Time</b> = $\frac{\text{Distance}}{\text{speed}}$<br><br>= $\frac{22 \text{ km}}{125 \text{ km/h}}$<br><br>= 0,176 hours<br>$\approx$ 0 hour 10,6 minutes   | $\checkmark$ SF<br>$\checkmark$ CA<br>$\checkmark$ C<br>MA  | 1SF substitution<br>1 CA answer<br>1C conversion<br><b>NPR</b>  |
| 1.2.5 | 6,5 cm : 22 km<br>6,5 : 2 200 000<br>1 : 338 468,5   | $\checkmark$ MA <b>OR</b> $\checkmark$ MA<br>$\checkmark$ C $\checkmark$ C<br>$\checkmark$ S $\checkmark$ S | 1 MA method<br>1C conversion<br>1S simplification   |
| 1.3.1 | Entrance/Ingang 1  | $\checkmark\checkmark$ RM   | 2RM reading from the map  |
| 1.3.2 | Store/Winkel 218   | $\checkmark\checkmark$ RM   | 2RM reading from the plan   |
| 1.3.3 | Store/Winkel 255<br>Bandit Brothers  | $\checkmark$ RM<br>$\checkmark$ A   | 1RM reading from the plan<br>1A correct name of the store   |
| 1.3.4 | Turn left/west at Vodacom (Store 230)<br>Follow the corridor until you reach store 215 or 218<br>Turn right/north at store 215 / 218<br>Store 205 is at the end of the corridor on your right-hand side<br><br><i>Draai links/wes by Vodacom (Winkel 230)</i><br><i>Volg die gang tot by winkel 215 of 218</i><br><i>Draai regs/noord by winkel 215 / 218</i><br><i>Winkel 205 is aan die einde van die gang op regterhand</i> | $\checkmark$ A<br>$\checkmark$ A<br>$\checkmark$ A<br>$\checkmark$ A<br>$\checkmark$ A<br>$\checkmark$ A    | 1A turning left/west<br>1A going straight reaching store 215 or 218<br>1A turning right/north<br><br>1A reaching the store on the right |



|   |  |   |   |
|---|--|---|---|
| 1.3.5   | <p>Average Speed/<i>Gemiddelde spoed</i></p> <p>✓SF</p> $= \frac{215 \text{ m}}{(15 \times 60) \text{ sec}} \quad \checkmark \text{C}$ <p>= 0,24 m/s ✓CA</p> | <p>1SF substituting both<br/>215 m and 15 min<br/>1C multiplying by 60</p> <p>1CA simplification</p> <p><b>NPR</b></p>  |   |
| 1.3.6   | North East/ <i>Noord-oos</i> ✓✓A   | 2A general direction  |   |
| 1.4.1   | Six <b>OR</b> 6 ✓✓A  | 2A correct number of doors  |   |
| 1.4.2   | 7;8;10;11;12;20 and 21 ✓✓A   | <p>2A correct number of rows</p> <table border="1" style="width: 100%;"> <tr> <td> <p><b>Penalty:</b><br/> <b>One missing value one mark</b><br/> <b>Two or more missing values no marks</b></p> </td> </tr> </table> | <p><b>Penalty:</b><br/> <b>One missing value one mark</b><br/> <b>Two or more missing values no marks</b></p> |
| <p><b>Penalty:</b><br/> <b>One missing value one mark</b><br/> <b>Two or more missing values no marks</b></p> |  |   |   |
| 1.4.3   | <p>Length of plane on the plan</p> <p>✓RT</p> <p>= 50m × 1000 ✓C</p> $= \frac{50\,000}{200} \quad \checkmark \text{M}$ <p>= 250 mm ✓CA</p>                   | <p>1RT correct value</p> <p>1C converting m to mm<br/>1M dividing by 200</p> <p>1CA answer in mm</p>  |   |

## QUESTION / VRAAG 2

|       |   |  |
|-------|---|--|
| 2.1.1 | <p>Less obstructions ✓✓O</p> <p><b>OR</b></p> <p>Less time spent on the road ✓✓O</p> <p><b>OR</b></p> <p>Saves fuel ✓✓O</p> <p><b>Any other relevant answer</b></p>                                 | 20 Reason  |
| 2.1.2 | <p>Distance on the map : 4,5 cm ✓M [<b>Accept 4,4 – 4,7cm</b>]</p> <p>4,5 cm : 545 km</p> <p>4,5 : 545 × 100 000 ✓C</p> <p>4,5 : 545 00 000</p> <p>1 : 12111111,11 ✓CA</p> <p>1 : 12 111 000 R✓</p> | <p>1M measure on map</p> <p>1C conversion</p> <p>1CA answer</p> <p>1R rounding with CA</p> |

|       |  |  |
|-------|--|--|
|       | <p><b>OR</b></p> <p>45 mm : 545 km            ✓M<br/> 45 mm : 545 000 000      ✓C<br/> 1     : 121 11111,11        ✓CA<br/> 1     : 121 11000            ✓R</p>  | <b>NOTE: Measure on final copy</b>   |
| 2.2.1 | <p>Full tanks = <math>\frac{545 \text{ km}}{650 \text{ km}}</math> ✓MA<br/> = 0,8384615385<br/> For a return trip = <math>0,8384615385 \times 2</math> ✓M<br/> = 1,676923077....tanks<br/> ≈ 2 full tanks ✓R<br/> He will need 2 full tanks.</p> | <p>1MA division</p> <p>1M multiplying by 2</p> <p>1R answer</p>  |
| 2.2.2 | <p>Total cost of petrol = <math>2 \text{ tanks} \times 55\ell</math> ✓MA<br/> = 110 ℓ<br/> <math>110 \ell \times R15,54</math> ✓M<br/> = R1 709,40 ✓CA</p>   | <p><b>CA from 2.3.1</b></p> <p>1MCA multiplying by 55</p> <p>1M multiplying by R15,54</p> <p>1CA answer</p>    |
| 2.3   | <p><b>Total operating cost</b> ✓SF<br/> = <math>[788 + (8,03 \times 15,54 + 22,73 + 16,70)] \times 545</math> ✓M<br/> = 518957,83<sup>c</sup> ✓S<br/> = R5 189,58 ✓CA</p>  | <p>1SF correct values</p> <p>1M adding and multiplying</p> <p>1S answer in cents</p> <p>1CA answer in rand</p> |

# MEASUREMENT / METING

## QUESTION / VRAAG 1

|              |  |   |
|--------------|--|---|
| 1.1.1        | $\begin{aligned} \text{Length/} \textit{lengte} &= 2\,440 \div 1\,000 && \checkmark \text{MA} \\ &= 2,44 \text{ m} && \checkmark \text{A} \\ \\ \text{Width/} \textit{breedte} &= 2\,100 \div 1\,000 \\ &= 2,1 \text{ m} && \checkmark \text{A} \end{aligned}$   | 1MA divide by<br>$1\,000(\div 100 \div 10)$<br>1A length<br><br>1A width  |
| 1.1.2        | $\begin{aligned} &&& \checkmark \text{MA} \\ A &= 5\,480 - (2 \times 2\,240) - (2 \times 150) \\ &= 300 \text{ mm} && \checkmark \text{CA} \end{aligned}$  | 1MA subtraction of<br>correct values<br>1CA simplification  |
| 1.1.3        | $\begin{aligned} &&& \checkmark \text{M} && \checkmark \text{SF} \\ \text{Total(e) area} &= 2 \times (2,44 \times 2,1) \\ &= 10,248 \text{ m}^2 && \checkmark \text{CA} \\ \\ &&& \text{OR/OF} \\ \\ &&& \checkmark \text{M} && \checkmark \text{SF} \\ \text{Total(e) area} &= 2 \times (2\,440 \times 2\,100) \\ &= 10\,248\,000 \text{ mm}^2 && \checkmark \text{CA} \end{aligned}$                                       | 1SF substitution in<br>formula<br>1M multiply by 2<br>1A total area<br><br><b>OR</b><br>1SF substitution in<br>formula<br>1M multiply by 2<br>1A total area   |
| 1.1.4        | $\begin{aligned} B &= 1,5 \times 3 && \checkmark \text{MA} \\ &= 0,45 \text{ m} && \checkmark \text{A} \\ \\ &&& \checkmark \text{M} \\ \text{Total(e) area} &= 5,48 \times (2,1 + 0,45) && \checkmark \text{M} \\ &= 13,974 \text{ m}^2 && \checkmark \text{CA} \\ \\ \text{Area of bricks/} \textit{van bakstene} &= 13,974 - 10,248 && \checkmark \text{M} \\ &= 3,726 \text{ m}^2 && \checkmark \text{CA} \end{aligned}$ | <b>CA from Question 1.1.2<br/>           and 1.1.3</b><br>1MA multiply by 3<br>1A value of B<br>1M multiply by 5,48<br>1M adding 0,45<br>1CA simplification<br>1M subtraction<br>1CA simplification |
| 1.2.1<br>(a) | $\begin{aligned} &&& \checkmark \text{MA} \\ 245 \text{ mm} &\div 10 \\ &= 24,5 \text{ cm} && \checkmark \text{CA} \end{aligned}$  | 1MA dividing by 10<br>1CA simplification  |
| 1.2.1<br>(b) | $\begin{aligned} &&& \checkmark \text{MA} \\ 17,5 \text{ cm} &\div 2 \\ &= 8,75 \text{ cm} && \checkmark \text{CA} \end{aligned}$  | 1MA divide by 2<br>1CA simplification   |
| 1.2.2        | $\begin{aligned} &&& \checkmark \text{SF} \\ \text{Volume} &= 3,142 \times (8,75 \text{ cm})^2 \times 24,5 \text{ cm} \\ &= 5\,893,70 \text{ cm}^3 && \checkmark \text{A} \\ &\approx 5\,890 \text{ cm}^3 && \checkmark \text{R} \end{aligned}$  | <b>CA from Question 1.2.1(b)</b><br>1SF substitution in<br>formula<br>1CA simplification<br>1R rounding   |

**QUESTION / VRAAG 2**

|       |  |  |
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| 2.1.1 | $P = \frac{85}{2} \checkmark \text{MA}$ $= 42,5 \text{ cm} \div 100 \quad \checkmark \text{C}$ $= 0,43 \text{ m} \quad \checkmark \text{CA}$   | 1MA dividing by 2<br>1C conversion<br>1CA correct height   |
| 2.1.2 | $\text{Width/Breedte} = \frac{75}{2} \quad \checkmark \text{MA}$ $= 37,5 \text{ cm} \quad \checkmark \text{A}$ $\text{Length/Lengte} = 43,5 \text{ cm} \quad \checkmark \text{A}$  |  |
| 2.1.3 | <p>Area of rectangular lid / <i>Oppervlakte van reghoekige deksel</i></p> $= 37,5 \times 43,5 \quad \checkmark \text{SF}$ $= 1\,631,25 \text{ cm}^2 \times 100 \quad \checkmark \text{C}$ $= 163\,125 \text{ mm}^2 \quad \checkmark \text{CA}$ <p style="text-align: center;"><b>OR/OF</b></p> <p>Area of rectangular lid / <i>Oppervlakte van reghoekige deksel</i></p> $= 375 \times 435 \quad \checkmark \text{SF} \quad \checkmark \text{C}$ $= 163\,125 \text{ mm}^2 \quad \checkmark \checkmark \text{CA}$ | 1SF substitution in the formula<br>1A correct area<br>1C conversion<br>1CA correct area in mm <sup>2</sup> <p style="text-align: center;"><b>OR/OF</b></p> 1SF substitution in the formula<br>1C conversion<br>2CA correct area in mm <sup>2</sup> |
| 2.1.4 | $\text{Height/Hoogte} = 120 - 85 \quad \checkmark \text{MA}$ $= 35 \text{ cm} \quad \checkmark \text{A}$ $\text{Volume} = 75 \text{ cm} \times 43,5 \text{ cm} \times 35 \text{ cm} \quad \checkmark \text{SF}$ $= 114\,187,5 \text{ cm}^3 \quad \checkmark \text{CA}$ $= 114\,000 \text{ cm}^3 \quad \checkmark \text{R}$   | 1MA subtracting correct values<br>1A correct height<br>1SF substitution in the formula<br>1CA volume<br>1R rounded volume  |
| 2.2.1 | $80 \text{ yards/jaart} \div 1,0936 \quad \checkmark \text{MA}$ $= 73,15 \text{ m} \quad \checkmark \text{A}$  | 1MA dividing with 1,0936<br>1A distance in meter   |
| 2.2.2 | <p>Soccer field/<i>sokkerveld</i></p> $= \text{length} \times \text{width/lengte} \times \text{wydte}$ $= 110 \text{ m} \times 73,15 \text{ m} \quad \checkmark \text{SF}$ $= 8\,046,50 \text{ m}^2 \quad \checkmark \text{CA}$  | 1SF correct substitution<br>1CA simplification   |

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| 2.2.3 | <p>Grass blocks/<i>grasblokke</i><br/> = 150 cm × 80 cm<br/> = 12 000 cm<sup>2</sup> ✓A<br/> ≈ 1,2 m<sup>2</sup> ✓C<br/> Number/<i>aantal</i> = 8 046,50 ÷ 1,2 ✓MA<br/> = 6 705,41 ✓CA<br/> = 6 706 ✓R</p> | <p><b>CA from Q2.2.2</b><br/> 1A area of 1 block<br/> 1C conversion<br/> 1MA dividing by area of 1 block<br/> 1CA simplification<br/> 1R rounding</p> |
| 2.2.4 | <p>Radius = 14,64 ÷ 2 ✓MA<br/> = 7,32 m ✓A</p>   | <p>1MA dividing by 2<br/> 1A radius</p>   |
| 2.2.5 | C ✓✓ A   | 2A correct formula  |

### QUESTION / VRAAG 3

|           |   |   |
|-----------|---|---|
| 3.1.1     | 2 years to 20 years ✓✓A   | 2A answer   |
| 3.1.2     | It means that 15% of the girls weigh more than this girl and 85% weigh less. ✓✓O  | 2O explanation  |
| 3.1.3 (a) | This girl's BMI-for-age relationship is positioned between 85 <sup>th</sup> and 95 <sup>th</sup> percentage. She is at risk for overweight. ✓A ✓A   | 1A percentiles<br>1A answer   |
| 3.1.3 (b) | $\text{BMI} = \frac{\text{Weight (in kilograms)}}{(\text{Height in metres})^2}$ $24,5 \text{ kg/m}^2 = \frac{36 \text{ kg}}{(\text{Height in metres})^2} \quad \checkmark \text{SF}$ <p>✓M</p> $\text{Height} = \sqrt{\frac{36}{24,5}} \quad \checkmark \text{M}$ $= 1,21 \text{ m} \quad \checkmark \text{CA}$ | <p>1SF correct values</p> <p>1M new subject<br/>1M finding sq. root</p> <p>1CA simplification</p> |
| 3.1.4     | $^{\circ}\text{F} = (1,8 \times ^{\circ}\text{C}) + 32$ $= (1,8 \times 5,99) + 32 \quad \checkmark \text{SF}$ $= 42,782^{\circ}\text{F} \quad \checkmark \text{A}$ $\approx 43^{\circ}\text{F} \quad \checkmark \text{R}$   | <p>1SF substitution<br/>1A answer<br/>1R rounding</p>   |
| 3.2.1     | <p>Total perimeter = 2 × 3 000 + 2 × 9754 ✓M<br/> = 6 000 + 19 508<br/> = 25 508 mm ✓A</p> <p>Perimeter of the waiting room = <math>\frac{2}{3} \times 25 508 \text{ mm}</math> ✓M<br/> = 17 005,33 mm ✓A</p>   | <p>1M Method<br/>1A answer</p> <p>1M Method<br/>1A answer<br/><b>NPR</b></p>                      |

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| 3.2.2 | $3\,000\text{ mm} = 300\text{ cm}$<br>$9\,754\text{ mm} = 975,4\text{ cm} \quad \checkmark\text{C}$<br><br>Area = $975,4\text{ cm} \times 300\text{ cm} \quad \checkmark\text{SF}$<br>$= 292\,620\text{ cm}^2 \quad \checkmark\text{CA}$ | 1C conversion (both)<br><br>1SF substitution<br>1CA answer |
|-------|--|--|

QUESTION / VRAAG 4

|       |  |  |
|-------|--|--|
| 4.1.1 | $1\text{ foot/ voet} = 30,48\text{ cm}$<br><br>$4 \times 30,48\text{ cm} \quad \checkmark\text{C}$<br>$= 121,92\text{ cm} \quad \checkmark\text{CA}$<br><br>$r = \frac{121,92\text{ cm}}{2} \quad \checkmark\text{M}$ $= 60,96\text{ cm} \quad \checkmark\text{CA}$  | 1C conversion<br>1CA simplification<br><br>1M dividing by 2<br><br>1CA simplification  |
| 4.1.2 | $H = 12 \times 2,54\text{ cm}$<br>$= 30,48\text{ cm} \quad \checkmark\text{C}$<br><br>Volume = $3,142 \times (60,96\text{ cm})^2 \times 30,48\text{ cm} \quad \checkmark\text{SF}$<br>$\quad \quad \quad \checkmark\text{S}$<br>Volume = $3,142 \times 3716,1216\text{ cm}^2 \times 30,48\text{ cm}$<br><br>$= 355\,886,13\text{ cm}^3 \quad \checkmark\text{CA}$  | <b>CA from Question 4.1.1</b><br><br>1C conversion<br>1SF substitution of<br>correct values<br>1S simplification<br><br>1CA simplification<br><b>NPR</b>         |
| 4.1.3 | Area = $3,142 \times (60,96\text{ cm})^2 \quad \checkmark\text{SF}$<br>$= 3,142 \times 3\,716,1216\text{ cm}^2 \quad \checkmark\text{S}$<br>$= 11\,676,05407\text{ cm}^2$<br><br>$\frac{11\,676,05407\text{ cm}^2}{10\,000} \quad \checkmark\text{MA}$ $= 1,167605407\text{ m}^2$<br>$= 1,17\text{ m}^2 \quad \checkmark\text{CA}$<br><br><i>John is correct/korrek</i><br><i>They have 0,83 m<sup>2</sup> more than required/</i><br><i>Hulle het 0,83 m<sup>2</sup> meer as wat benodig word. \quad \checkmark\text{O}</i> | <b>CA from Question 4.1.1</b><br>1SF substitution into<br>formula<br>1S simplification<br><br>1MA dividing by 10 000<br><br>1CA simplification<br><br>1O opinion |
| 4.1.4 | $3 \times 5\text{ gallon}$<br>$= 15\text{ gallon} \quad \checkmark\text{MA}$<br><br>$15 \times 3,7854\text{ ℓ} \quad \checkmark\text{C}$<br>$= 56,781\text{ ℓ} \quad \checkmark\text{CA}$  | 1MA multiply by 3<br><br>1C conversion<br>1CA simplification   |

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|       | $20\ell \times 2,75$<br>$= 56\ell \quad \checkmark A$<br><br>$56,781\ell - 56\ell$<br>$= 0,781\ell \quad \checkmark CA$<br><br><p style="text-align: center;"><b>OR/OF</b></p> $5 \times 3,7854\ell$<br>$= 18,927\ell \quad \checkmark C$<br><br>$18,927\ell \times 3 \quad \checkmark MA$<br>$= 56,781\ell \quad \checkmark CA$<br><br>$20\ell \times 2,75$<br>$= 50\ell \quad \checkmark A$<br><br>$56,781\ell - 56\ell$<br>$= 0,781\ell \quad \checkmark CA$<br><br>No, she is not correct.<br>There will be a shortage of 0,781 ℓ if she only uses two and three quarter 20 ℓ buckets /<br><i>Nee, sy is verkeerd.</i><br><i>Daar sal 'n tekort van 0,781 ℓ wees indien sy net twee en 'n drie-kwart 20 ℓ emmers gebruik.</i> | 1A number of litres<br><br>1CA simplification<br><br><p style="text-align: center;"><b>OR</b></p> 1C conversion<br><br>1MA multiply by 3<br>1CA simplification<br><br>1A number of litres<br><br>1CA simplification<br><br>1O opinion |
| 4.2.1 | $r = 60,96\text{ cm} \quad \checkmark CA$<br><br><p style="text-align: center;"><math>\checkmark SF</math></p> Circumference / <i>Omtrek</i> = $2 \times 3,142 \times 60,96\text{ cm}$<br>$= 383,07264\text{ cm} \quad \checkmark A$  | <b>CA from Question 4.1.1</b><br>1CA radius<br>1SF substitution of correct values<br>1CA simplification   |
| 4.2.2 | Length of 1 brick/ <i>Lengte van 1 baksteen</i><br>$220\text{ mm} \div 10 = 22\text{ cm} \quad \checkmark MA$<br><br>$\frac{383,07264\text{ cm}}{22\text{ cm}} \quad \checkmark MA$ $= 17,41239273 \quad \checkmark CA$ $\approx 18 \quad \checkmark R$ $18\text{ bricks} \times 4 \quad \checkmark MA$ $= 72\text{ bricks} \quad \checkmark CA$  | <b>CA from Question 4.2.1</b><br><br>1MA dividing by 10<br><br>1MA dividing by length of one brick<br>1CA simplification<br>1R rounding<br>1MA multiply by 4 layers<br>1CA simplification   |
| 4.2.3 | $R2,90 \times 72 \quad \checkmark MA$<br>$= R208,80 \quad \checkmark CA$<br><br>R200,00 is not enough / <i>R200,00 is nie genoeg nie.</i><br>It is R8,80 more than R200,00 / <i>Dit is R8,80 meer as R200,00.</i><br><p style="text-align: center;"><math>\checkmark O</math></p>   | <b>CA from Question 4.2.2</b><br>1MA multiplying with cost of one brick<br>1CA simplification<br><br>1O opinion   |