

Need an amazing tutor?

www.teachme2.com/matric



Collected and collated by

teachme2



basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

**SENIOR CERTIFICATE EXAMINATION/
NATIONAL SENIOR CERTIFICATE EXAMINATION
*SENIORSERTIFIKAAT-EKSAMEN/NASIONALE
SENIORSERTIFIKAAT-EKSAMEN***

MATHEMATICAL LITERACY P1/WISKUNDIGE GELETTERDHEID VI

MAY-JUNE 2021

MARKING GUIDELINES/NASIENRIGLYNE

MARKS/PUNTE: 150

Symbol/Kode	Explanation/Verduideliking
M	Method/Metode
MA	Method with accuracy/Metode met akkuraatheid
CA	Consistent accuracy/Volgehoue akkuraatheid
A	Accuracy/Akkuraatheid
C	Conversion/Herleiding
S	Simplification/Vereenvoudiging
RT	Reading from a table/graph/document/diagram/Lees vanaf 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 consistent accuracy/Metode met volgehoue akkuraatheid

**This marking guideline consists of 15 pages
*Hierdie nasienriglyne bestaan uit 15 bladsye.***

NOTE:

- If a candidate answers a question TWICE, only mark the FIRST attempt.
- If a candidate has crossed out (cancelled) an attempt to a question and NOT redone the solution, mark the crossed out (cancelled) version.
- Consistent accuracy (CA) applies in ALL aspects of the marking 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.
- General principle of marking, if the candidate makes one mistake he loses one mark.

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 op by die tweede berekeningsfout.
- Wanneer 'n kandidaat aflesings vanaf 'n grafiek, tabel, uitlegplan en kaart geneem en ekstra antwoorde gee, penaliseer vir elke ekstra item.
- Die algemene beginsel van merk as 'n leerder een fout maak verloor hy een punt.

QUESTION/VRAAG 1 [32 MARKS/PUNTE] ANSWER ONLY FULL MARKS			
Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
1.1.1	$\text{Radius/Radius} = 300 \text{ mm} \div 2 \quad \checkmark \text{MA}$ $= 150 \text{ mm} \quad \text{OR/OF} \quad 15 \text{ cm} \quad \checkmark \text{A}$	1MA dividing by 2 1A simplify (2)	M L1
1.1.2	$\checkmark \text{RT}$ $\text{R330,00; R275,00; R220,00; R110,00} \quad \checkmark \text{CA}$	1RT reading all the values 1CA correct order (2)	F L1
1.1.3	$\text{VAT/BTW} = \text{R275,00} \times 15\% \quad \checkmark \text{MA}$ $= \text{R41,25} \quad \checkmark \text{A}$ OR/OF Price including VAT/Prys BTW ingesluit $= \text{R275} \times 1,15$ $= \text{R316,25} \quad \checkmark \text{MA}$ $\text{VAT} = \text{R316,25} - \text{R275}$ $= \text{R41,25} \quad \checkmark \text{A}$	1MA multiplying by 15% 1A simplify OR/OF 1MA calculating VAT 1A simplify (2)	F L1
1.1.4	$150 \div 60 \quad \checkmark \text{A}$ $= 2,5 \quad \text{OR/OF} \quad 2\frac{1}{2} \text{ hours/uur} \quad \checkmark \text{A}$	1A divide by 60 1A 2,5 hours (2)	M L1

Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
1.1.5	Total cost/ <i>Totale Koste</i> $= R330,00 + R275,00 + R220,00 + R220,00 + R165,00 + R110,00$ $= R1\ 320$	1MA adding all correct values 1MCA simplify (at least 5 correct values) (2)	F L1
1.1.6	Discount/ <i>Afslag</i> = $R330,00 \times 7,5\%$ $= R24,75$	1MA multiplying by 7,5% 1A simplification (2)	F L1
1.2.1	$\frac{1\ 250\ g}{1\ 000}$ $= 1,25\ kg$	1MA dividing by 1 000 1A simplification (2)	M L1
1.2.2	Cost Price/ <i>Kosprys</i> $= R55,00 - R30,30$ $= R24,70$	1MA subtracting correct values in the correct order 1A simplification (2)	F L1
1.2.3	$1\ 250 : 500$ $5 : 2 \text{ OR/OF } 2,5 : 1 \text{ OR/OF } 1 : 0,4$	1MA values in correct order 1CA simplified form (2)	M L1
1.2.4	Number of packets/ <i>Aantal pakkies</i> $\frac{4\ 000\ g}{500\ g} = 8$ Mass/ <i>Massa</i> $\frac{100\ g}{8}$ $= 12,5\ g$ OR/OF Mass/ <i>Massa</i> $\frac{500\ g \times 100\ g}{4\ 000\ g} = 12,5\ g$	1A number of 500g packs 1MA dividing 100 g by 8 1CA simplification OR/OF 1MA number of 500g packs 1A dividing 4 000 g 1CA simplification	M L1

Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
	<p style="text-align: center;">OR/OF</p> <p>4000 g : 100 g ✓MA 500 g : mass of raisins/massa van rosyntjies</p> <p>Mass of raisins = $\frac{50\,000\text{ g}}{4\,000}$ ✓A</p> <p>Mass of raisins/Massa van rosyntjies = 12,5 g ✓CA</p>	<p style="text-align: center;">OR/OF</p> <p>1MA correct ratio concept</p> <p>1A dividing 4 000 g</p> <p>1CA simplification (3)</p>	
1.2.5	<p>Number of cups/aantal koppies ✓MA = 2×5 = 10 ✓A</p> <p style="text-align: center;">OR/OF</p> <p>4 000 : 5 ✓MA 8 000 : 10 ∴ The number of cups = 10 ✓A</p>	<p>1MA multiply by 2 and 5 1A simplification</p> <p style="text-align: center;">OR/OF</p> <p>1MA correct ratio 1A simplification (2)</p>	M L1
1.3.1	<p>Money earned on an investment/ <i>Geld verdien op 'n belegging.</i> ✓✓A</p>	<p>2A definition (2)</p>	F L1
1.3.2	<p>25 months/maande ✓✓A</p>	<p>2A correct number of months (2)</p>	M L1
1.3.3	<p>Bank A ✓✓A</p>	<p>2A correct bank (2)</p>	F L1
1.3.4	<p>Difference/Verskil ✓RT ✓RT 7,50% – 6,7% = 0,8% ✓CA</p>	<p>1RT correct value from tables 1RT correct value from tables 1CA simplification (one value must be correct) (3)</p>	F L1
		[32]	

QUESTION/VRAAG 2 [37 MARKS/PUNTE]			
Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
2.1.1	Dr. JJ Ndlovu ✓✓A	2A correct name (2)	F L1
2.1.2	Year of birth/ <i>Geboortejaar</i> 1982 / '82 ✓✓RT	2RT reading from table (2)	F L1
2.1.3	R0,00/nothing/ <i>niks</i> ✓✓A	2A correct amount (2)	F L1
2.1.4	Amount excluding VAT/ <i>Bedrag BTW uitgesluit</i> $R1\ 744,75 \div \frac{115}{100} \text{ OR/OF } \times \frac{100}{115} \quad \checkmark A$ $R1\ 744,75 \div 1,15 \quad \checkmark M$ $= R1\ 517,17 \quad \checkmark CA$ <p style="text-align: center;">OR/OF</p> VAT amount/ <i>BTW bedrag</i> $R1\ 744,75 \times \frac{15}{115}$ $= R227,58 \quad \checkmark A$ Amount excluding VAT/ <i>Bedrag BTW uitgesluit</i> $= R1\ 744,75 - R227,58 \quad \checkmark M$ $= R\ 1\ 517,17 \quad \checkmark CA$	$1A \quad \frac{115}{100} \text{ OR } \frac{100}{115}$ $1M \div \frac{115}{100} \text{ OR } \times \frac{100}{115}$ 1CA simplification <p style="text-align: center;">OR/OF</p> 1A amount VAT 1M subtracting VAT 1CA simplification (3)	F L2
2.1.5	One infection control / <i>Een infeksiebeheer</i> =R40,55 ÷ 2 ✓MA = R20,28 ✓A	1MA divide by 2 1A simplification NPR AO (2)	F L1
2.2.1	Total fixed cost/ <i>Totale vaste koste</i> = R140,00 + R60,00 ✓RT = R200,00 ✓CA	1RT correct values 1CA simplification (one value must be correct) (2)	F L1

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
2.2.2	<p>Expenses/Uitgawes</p> <p>Expenses (A) = R200,00 + R12,50 × number of packets</p> <p>A = R200,00 + R12,50 × 10 ✓SF</p> <p>A = R200,00 + R125,00</p> <p>= R325,00 ✓A</p> <p>$B = 400 \div 25$ ✓SF OR/OF $B = (400 - 200) \div 12,5$ ✓SF</p> <p>= 16 ✓A = 16 ✓A</p>	<p>1SF correct substitution</p> <p>1A simplification</p> <p>1SF correct substitution</p> <p>1A simplification</p> <p>AO</p> <p>(4)</p>	<p>F</p> <p>L2</p>

Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
2.2.3 (a)	<p style="text-align: center;">INCOME AND EXPENDITURE OF 1 kg OF MIXED VEGETABLE PACKS INKOMSTE EN UITGAWES VAN 1 kg GEMENGDEGROENTE-PAKKE</p> <p>The graph shows two linear functions. The 'Income' line starts at the origin (0,0) and passes through points (10, 250), (20, 500), (30, 750), (40, 1000), and (50, 1250). The 'Expenses' line starts at (0,200) and passes through points (10, 325), (20, 450), (30, 575), (40, 700), and (50, 825). The two lines intersect at the point (15, 375).</p> <p style="text-align: center;">Amount in rand Bedrag in rand</p> <p style="text-align: center;">Number of 1 kg vegetable packs Aantal 1 kg groentepakke</p> <p>1A starting point (0; 0) 1A endpoint (50; 1 250) 1A straight line (must be joining at least 3 points stated in the table; CA for using B)</p>		F L2

(3)

Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
2.2.3 (b)	Where the cost price of mixed vegetable packs equals the selling price of the packs/ <i>Waar die kosprys van 'n pak groente gelyk is aan die verkoopprijs van die pak groente.</i>	2A explanation (2)	F L1
2.2.3 (c)	16 packs/ <i>pakke</i> ✓✓A	CA from Q2.2.2 / 2.2.3 (a) 2A correct number of packs (2)	F L1
2.3.1 (a)	Deposit/ <i>Deposito</i> $R1\ 799,00 \times \frac{20}{100}$ ✓MA = R359,80 ✓A	1MA calculating 20% 1A simplification (2)	F L1
2.3.1 (b)	Total amount/ <i>Totale bedrag</i> ✓MA = R359,80 + (24 × R95,00) = R359,80 + R2 280,00 ✓MCA = R2 639,80 ✓CA = R2 640,00 ✓R	CA from Question 2.3.1(a) 1MA multiplying by 24 1MCA adding the deposit 1CA simplification 1R to the nearest rand (4)	F L2
2.3.2 (a)	✓A The value of one currency relative to the value of another currency/ <i>Die waarde van een geldeenheid relatief tot die waarde van 'n ander geldeenheid.</i> ✓A	1A value of one currency 1A relative to the value of another currency (2)	F L1
2.3.2 (b)	✓✓A yen / jen / ¥ OR/OF Japanese yen / <i>Japanese jen</i> ✓✓A	2A correct currency (2)	F L1
2.3.2 (c)	1 ZAR = 0,067251 dollar (\$) ✓RT $\frac{\$130}{\$0,067251} \times R1$ ✓C = R1 933,056758 = R1 933,00 ✓R OR/OF Dollar (\$) = ZAR14,86966737 ✓RT $\frac{\$130}{\$1} \times R14,86966737$ ✓C = R1 933,056758 = R1 933,00 ✓R	1RT exchange rate 1C conversion 1R correct rounding OR/OF 1RT exchange rate 1C conversion 1R correct rounding (3)	F L2
		[37]	

QUESTION/VRAAG 3 [22 MARKS/PUNTE]			
Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
3.1.1	<p>Width/breedte = $3 \times 10,4 \text{ cm}$ ✓MA = $31,2 \text{ cm}$ ✓A</p> <p>Length/Lengte = $4 \times 10,4 \text{ cm}$ ✓MA = $41,6 \text{ cm}$ ✓A</p>	<p>1MA for multiplying diameter by 3 1A simplification</p> <p>1MA for multiplying diameter by 4 1A simplification</p> <p>(4)</p>	M L1
3.1.2	<p>Ribbon needed for one candle (cm) <i>Lint benodig vir een kers (cm)</i> = $2 \times 3,142 \times \text{radius} + 3 \text{ cm}$ = $2 \times 3,142 \times 5,2 \text{ cm} + 3 \text{ cm}$ ✓SF = $35,6768 \text{ cm}$ ✓A</p> <p>20×100 = $2\,000 \text{ cm}$ ✓C</p> <p>Number of candles/Aantal kerse $2\,000 \text{ cm} \div 35,6768 \text{ cm}$ ✓MCA = $56,05883936$ = 56 candles/kerse ✓R</p>	<p>1SF correct substitution (radius) 1A length for 1 candle</p> <p>1C conversion</p> <p>1MCA dividing by length of ribbon 1R correct number of candles</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;">Accept 55 candles if rounded earlier</div> <p>(5)</p>	M L3
3.1.3	<p>Volume = $3,142 \times (5,2\text{cm})^2 \times 11,4\text{cm}$ ✓SF = $968,54 \text{ cm}^3$ ✓CA</p> <p>Volume of horsehead/<i>Volume van kers met perd</i> = $\frac{2}{3} \times \frac{968,54}{1} \text{ cm}^3$ ✓MCA = $645,69 \text{ cm}^3$ ✓CA</p> <p style="text-align: center;">OR/OF</p> <p>✓✓CA $\frac{968,54}{3} = 322,84666 \times 2$ ✓MCA = $645,69 \text{ cm}^3$ ✓CA</p>	<p>CA from Question 3.1.2 1SF substituting correct values 1CA answer in cm^3</p> <p>1MCA multiply by 2 and dividing by 3 1CA simplification</p> <p style="text-align: center;">OR/OF</p> <p>2CA answer in cm^3 1MCA multiply by 2 and dividing by 3 1CA simplification</p>	M L2

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
3.1.3	<p style="text-align: center;">OR/OF</p> <p>Volume = $3,142 \times (5,2)^2 \times 11,4 \text{ cm}$ ✓SF $= 968,54 \text{ cm}^3$ ✓CA Volume of horsehead = $968,54 \text{ cm}^3 - \frac{1}{3} (968,54 \text{ cm}^3)$ $= 968,54 - 322,85$ ✓MCA $= 645,69 \text{ cm}^3$ ✓CA</p>	<p style="text-align: center;">OR/OF</p> <p>1SF substituting correct values 1CA answer in cm^3 1MCA subtracting 1CA simplification (4)</p>	
3.2.1 (a)	Ribbon/Lint OR/OF R/L ✓✓A	2A ribbon (2)	P L1
3.2.1 (b)	HBN /PSG ✓✓A	2A HBN/PSG (2)	P L1
3.2.2 (a)	<p style="text-align: center;">✓A ✓M ✓A ✓M</p> <p>$P_{[\text{candle with ribbon/ kers met lint}]} = \frac{1}{2} \times \frac{100}{1} \% \text{ OR/OF } \frac{4}{8} \times \frac{100}{1} \%$ $= 50\%$ ✓CA $= 50\%$ ✓CA</p>	<p>1A fraction 1M concept of percentage 1CA for percentage AO (3)</p>	P L2
3.2.2 (b)	<p>P/W $P_{[\text{Gold horsehead candle / Goue perdekop kers}]} = 0$ ✓✓A</p> <p style="text-align: center;">OR/OF</p> <p>Impossible/ Onmoontlik/ $\frac{0}{8}$ / 0% / 0,0 ✓✓A</p>	<p>2A correct probability (2)</p>	P L2
		[22]	

QUESTION/VRAAG 4 [21 MARKS/PUNTE]			
Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
4.1.1	North West / NW <i>Noord-wes/ NW</i> ✓✓RT	2RT reading from map (2)	MP L1
4.1.2	N8 ✓✓RT	2RT N8 (2)	MP L1
4.1.3	Campbell ✓✓RT	2RT town (2)	MP L1
4.1.4	04:00 – 09:30 = 5 hours 30 min / 5,5 hours/ure ✓A Average Speed / <i>Gemiddelde spoed</i> = $\frac{496,9}{5,5}$ ✓MCA = 90,3454545 km/h ✓CA = 90 km/h ✓R	1A calculating 5,5 hours 1MCA dividing correct values in correct order 1CA simplification 1R rounding (4)	MP L2

Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
4.2.1	1 unit on the plan represents 380 units in real life./ <i>1 eenheid op die plan verteenwoordig 380 eenhede in werklikheid.</i> ✓✓A	2A explanation (2)	MP L1
4.2.2	Lifts/Hysbakke ✓✓A OR/OF Ground Floor/Grondvloer ✓✓A OR/OF Stairs/Trappe ✓✓A	2A lifts (2)	MP L1
4.2.3	4 ✓✓A	2A correct value <div>Accept 2</div> (2)	MP L1
4.2.4	Bloed street entrance/Bloedstraat-ingang ✓✓RT OR/OF South entrance/Suidelike ingang ✓✓RT	2RT correct entrance (2)	MP L1
4.2.5	27 mm ✓✓✓A	2A for correct measurement 1A correct wall (Accept 26 – 28 mm) (3)	MP L1
		[21]	

QUESTION/VRAAG 5 [38 MARKS/PUNTE]			
Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
5.1.1	Range is the difference between the highest/maximum value and the lowest/minimum value in a data set. ✓✓A <i>Omvang is die verskil tussen die hoogste/maksimum waarde en die kleinste/minimum waarde in 'n dataversameling.</i>	2A correct definition (2)	D L1
5.1.2	Line graph/Lyngrafiek OR/OF ✓✓A Broken line graph/Gebrokelyn grafiek	2A correct graph (2)	D L1
5.1.3	Discrete data/Diskrete data ✓✓A	2A discrete (2)	D L1
5.1.4	✓M 1 749 + 2 239 + 1 618 + 903 + 429 + 150 + 16 ✓RT = 7 104 ✓CA	1RT correct values 1M adding ALL values 1CA simplification (at least 6 values correct) <div>Accept 7 136 = full marks</div> AO (3)	D L1
5.1.5	L2 ✓✓✓RT	3RT correct level (3)	D L1
5.1.6	Median level descriptor/Mediaanvlakbeskrywer ✓CA = 62; 223; 551; 935 1 231; 1 357; 1 990 ✓MCA L4 ✓CA OR/OF ✓MCA L2 : L3 ; L1 ; L4 ; L5 ; L6 , L7 ✓CA Median level/Mediaanvlak = L4 ✓CA	CA from Question 5.1.4 1MCA arranging in order 1CA correct median 1CA level descriptor OR/OF 1MCA arranging 1CA correct order 1CA level descriptor AO (3)	D L3

Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
5.2.1	✓✓A	2A correct tally (2)	D L1
5.2.2	6 ✓✓CA	CA from Question 5.2.1 2CA correct frequency (2)	D L1
5.2.3	✓RT $43 + 17 = 60$ ✓MA OR/OF ✓RT ✓MA $0 + 3 + 6 + 12 + 7 + 15 + 17 = 60$	1RT correct values 1MA simplification OR/OF 1RT correct values 1MA simplification (2)	D L1
5.3.1	✓A ✓A Stacked bar graph/ <i>Stapel staafgrafiek</i>	1A stacked 1A bar graph (2)	D L1
5.3.2	✓A Two hundred and ninety four thousand two hundred and two/ <i>Twee honderd vier en negentig duisend twee honderd en twee.</i>	1A first part of wording 1A second part of wording (2)	D L1
5.3.3	✓RT $298\ 607 - 222\ 034 - 9\ 670$ ✓M $= 66\ 903$ ✓CA	1RT correct values 1M subtracting 1CA simplification (two values must be correct) AO (3)	D L2
5.3.4	Mean/ <i>Gemiddelde</i> ✓RT $\frac{225458 + 263903 + 265810 + 245103 + 233858 + 222034}{6}$ ✓M $= 242\ 694,33$ ✓CA	1RT correct values 1M concept of mean 1CA simplification NPR (3)	D L2
5.3.5	Range/ <i>Omvang</i> $388\ 845 - 294\ 202$ ✓MA $= 94\ 643$ ✓CA	1MA concept of range 1CA simplification (one value must be correct) (2)	D L2

5.3.6	<p>% for Mathematics/% vir Wiskunde</p> <p>✓RT</p> $= \frac{222034}{530311} \times \frac{100}{1} \quad \checkmark \text{MA}$ <p>41,8686% ✓CA</p> <p>% for Mathematical Literacy/% vir Wiskundige Geletterdheid</p> $\frac{298607}{530311} \times \frac{100}{1}$ <p>56,3079% ✓CA</p> <p>56,3079% – 41,8686%</p> <p>= 14,4 % ✓CA</p> <p style="text-align: center;">OR/OF</p> <p>✓RT ✓M</p> $\frac{298\,607 - 222\,034}{530\,311} \times 100 \quad \checkmark \text{MA}$ <p>530 311 ✓CA</p> <p>= 14,4% ✓CA</p>	<p>1RT correct values</p> <p>1MA percentage calculation</p> <p>1CA simplification</p> <p>1CA simplification</p> <p>1CA simplification with correct rounding</p> <p style="text-align: center;">OR/OF</p> <p>1RT correct values</p> <p>1M subtracting values</p> <p>1CA correct denominator</p> <p>1MA percentage calculation</p> <p>1CA simplification with correct rounding</p> <p style="text-align: right;">(5)</p>	D L2
		[38]	
		TOTAL/TOTAAL: 150	