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**PROVINCIAL PREPARATORY EXAMINATION/
 PROVINSIALE VOORBEREIDINGSEKSAMEN**

GRADE/GRAAD 12

**MATHEMATICAL LITERACY P2/ P1
 WISKUNDIGE GELETTERDHEID V2/V1**

SEPTEMBER 2023

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 ni
AO	Answer only/Slegs antwoord
MCA	Method with consistent accuracy/Metode met volgehoue akkuraatheid
RCA	Rounding consistent with accuracy/Afronding met volgehoue akkuraatheid

**This marking guideline consists of 12 pages./
 Hierdie nasienriglyne bestaan uit 12 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.

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.



QUESTION/VRAAG 1 [26 MARKS/PUNTE] ANSWER ONLY FULL MARKS			
Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
1.1.1	Value Added Tax/ <i>Belasting op Toegevoegde waarde</i> ✓✓RT	2 correct definition (2)	F L1
1.1.2	Discount price/ <i>Afslag prys</i> = R80 ÷ 4 ✓MA = R20 ✓A	1MA dividing correct values 1A simplification (2)	F L1
1.1.3	Amount of Combo's/ <i>Aantal Kombinasies</i> = R400 ÷ R80 ✓MA = 5 ✓A	1MA dividing correct values 1A simplification (2)	F L1
1.1.4	P = 0 ✓✓A	2A correct value (2)	P L1
1.1.5	Total price/ <i>Totale prys</i> = R21,99 + R16,99 ✓MA = R38,98 ✓A	1MA adding correct values 1A simplification (2)	F L1
1.1.6	Total amount/ <i>Totale bedrag</i> = R16,99 × 5 ✓MA = R84,95 ✓A	1MA multiplying correct values 1A simplification (2)	F L1
1.1.7	Total price/ <i>Totale prys</i> = R80 + R90 ✓MA = R170 ✓A ✓✓A	1MA adding correct values 1A simplification (2)	F L1
1.2.1	Categorical data/ <i>Kategorieese data</i>	2A correct classification (2)	D L1
1.2.2	Three hundred and ten million two hundred and thirty five thousand/ <i>Driehonderd en tien miljoen tweehonderd vyf en dertig duisend</i> ✓✓A	2A amount in words (2)	F L1
1.2.3	A deficit is when the total current expenses is more than the total current income/ <i>'n Tekort is wanneer die totale bedryfsuitgawes meer is as die totale bedryfsinkomstes</i> ✓✓A	2A correct explanation (2)	F L1
1.2.4	C ✓✓A	2A correct letter (2)	P L1
1.2.5	Surplus/Deficit <i>Oorskot/Tekort</i> = 377 194 000 – 340 861 000 ✓MA = 36 333 000 ✓A	1MA subtracting correct values 1A simplification (2)	F L1
1.2.6	2021-2022	2A correct year (2)	D L1
		[26]	



2.2.3	<p>Total cost/<i>Totale koste</i></p> $\begin{aligned} & \checkmark\text{SF} \quad \checkmark\text{A} \quad \checkmark\text{SF} \\ & = (\text{R}68\,033 \times 120) + \text{R}1\,600\,015 \\ & = \text{R}8\,163\,960 + \text{R}1\,600\,015 \checkmark\text{CA} \\ & = \text{R}9\,763\,975 \checkmark\text{CA} \end{aligned}$	<p>1A number of months 1SF correct instalment 1SF correct once-off cost 1CA simplification 1CA total cost</p> <p>(5)</p>	F L2
2.2.4	<p>Amount more/<i>Bedrag meer</i></p> $\begin{aligned} & \text{R}9\,763\,975 - \text{R}5\,990\,000 \checkmark\text{M} \\ & = \text{R}3\,773\,975 \checkmark\text{CA} \end{aligned}$ $\begin{aligned} \text{\% more} &= \frac{3\,773\,975}{5\,990\,000} \times 100\% \quad \checkmark\text{MCA} \\ &= 63\% \checkmark\text{CA} \end{aligned}$	<p>CA from Question 2.2.3</p> <p>1M subtracting correct values 1CA total loan cost</p> <p>1MCA percentage calculation 1CA simplification</p> <p>(4)</p>	F L2
2.2.5	<p>1st Year/<i>Iste Jaar</i></p> $\begin{aligned} & = \text{R}350\,000 \times \frac{117}{100} \quad \checkmark\text{MA} \\ & = \text{R}409\,500 \checkmark\text{CA} \end{aligned}$ <p>2nd Year/<i>2de Jaar</i>:</p> $\begin{aligned} & \checkmark\text{CA} \quad \frac{117}{100} \\ & \text{R}409\,500 \times \frac{117}{100} \\ & = \text{R}479\,115 \quad \checkmark\text{CA} \end{aligned}$ <p>3rd Year/<i>3de Jaar</i>:</p> $\begin{aligned} & = \text{R}479\,115 \times \frac{117}{100} \\ & = \text{R}560\,564,55 \\ & = \text{R}560\,600 \quad \checkmark\text{R} \end{aligned}$	<p>1MA interest calculation</p> <p>1CA simplification</p> <p>1CA using correct amount</p> <p>1CA simplification</p> <p>1CA simplification 1R to the nearest Hundred Rand</p> <p>(6)</p>	F L3



Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
2.2.6	<p>Total monthly instalments option two/<i>Totale maandelikse paaieiment opsie twee</i></p> <p>$= 15 \times 12 \times R55\,935 \quad \checkmark MA$ $= R10\,068\,300 \quad \checkmark A$</p> <p>Total monthly instalments option three/<i>Totale maandelikse paaieiment opsie drie</i></p> <p>$= 20 \times 12 \times R50\,659$ $= R12\,158\,160 \quad \checkmark A$</p> <p>Difference/<i>Verskil</i></p> <p>$R12\,158\,160 - R10\,068\,300$ $= R2\,089\,860 \quad \checkmark CA$</p> <p>INVALID $\checkmark O$</p>	<p>1MA multiplying correct values 1A simplification</p> <p>1A simplification</p> <p>1CA simplification</p> <p>1O verification</p>	<p>F L3</p> <p>(5)</p> <p>[36]</p>



QUESTION/VRAAG 3 [35 MARKS/PUNTE]			
Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
3.1.1	\checkmark RT Kenya, Botswana, Senegal/ <i>Kenia, Botswana, Senekal</i> \checkmark RT	1RT first correct country 1RT last two correct countries (2)	D L1
3.1.2	(c) Compound bar graph/ <i>Saamgestelde staafgrafiek</i> $\checkmark\checkmark$ A	2A correct graph (2)	D L1
3.1.3	Algeria/ <i>Algerië</i> $\checkmark\checkmark$ A	2A correct country (2)	D L2
3.1.4	Median/ <i>Mediaan</i> \checkmark A 2,9%; 8,2%; 8,3%; 9,1%; 10,1% ; 10,2% ; 12,4%; 12,8%; 12,9%; 21,3% $= \frac{10,1\% + 10,2\%}{2} \quad \checkmark$ M $= 10,15\% \quad \checkmark$ CA	1A arranging in order 1RT correctly estimated median values 1M concept of median 1CA simplification (4)	D L3
3.1.5	$\frac{4}{10}$ \checkmark A $= 0,4$ \checkmark A	1A correct numerator 1A correct denominator 1CA simplification (3)	P L2
3.1.6	Mean/ <i>Gemiddeld</i> \checkmark A $11,14\% = \frac{8,9\% + 9,0\% + 9,3\% + 9,3\% + 4,1\% + 10,4\% + 10,6\% + 10,2\% + P + 25,5\%}{10}$ \checkmark M $11,14 \times 10 = 97,3 + P$ \checkmark MA \checkmark A $P = 111,4 - 97,3$ \checkmark MCA $= 14,1\%$ \checkmark CA	1A correct value 1M concept of mean 1A adding table values MA multiplying by 10 1MCA simplification 1CA simplification (6)	D L3
3.1.7	No/ <i>Nee</i> \checkmark A The mean is affected by outliers/ <i>Die gemiddelde word geaffekteer deur uitskieters</i> $\checkmark\checkmark$ A	1A 2A correct reason (3)	D L4



Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
3.2.1	<p>Total population in 2022/<i>Totale bevolking in 2022</i></p> <p>= 17,826 million</p> <p>Total population in 2023/<i>Totale bevolking in 2023</i></p> <p>= 17,979 million</p> <p>Difference/<i>Verskil</i></p> <p style="text-align: center;">✓RT</p> <p>= (17,979 – 17,826) million ✓MA</p> <p>= 0,153 × 1 000 000</p> <p>= 153 000 ✓A</p>	<p>IRT correct values</p> <p>IMA subtracting correct values</p> <p>1A simplification</p> <div style="border: 1px solid black; padding: 2px; display: inline-block;"> <p>If the zeros are omitted, max 1 mark</p> </div> <p style="text-align: right;">(3)</p>	D L2
3.2.2	<p>Range/<i>Omvang</i></p> <p>Range = Highest – Lowest</p> <p style="text-align: center;">✓SF</p> <p>104,535 = 106,981 – B</p> <p>B = 106,981 – 104,535 ✓MCA</p> <p>= 2,446 ✓CA</p>	<p>1SF substituting correctly</p> <p>1MCA subtracting values</p> <p>1CA simplification</p> <p style="text-align: right;">(3)</p>	D L2
Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
3.2.3	<p>Percentage increase/<i>Persentasie toename</i></p> <p style="text-align: center;">✓A</p> <p>$\frac{107,734 - 106,981}{106,981} \times 100\%$ ✓MA</p> <p>= 0,7% ✓CA</p>	<p>1A subtracting values</p> <p>1MA dividing correct value</p> <p>1CA simplification</p> <p style="text-align: right;">(3)</p>	D L2
3.2.4	Kenya/ <i>Kenia</i> ✓✓A	2A correct modes	D L1
3.2.5	<p style="text-align: center;">✓A</p> <p>$\frac{4}{10} \times 100$</p> <p style="text-align: center;">✓A</p> <p>= 40% ✓CA</p>	<p>1A correct numerator</p> <p>1A correct denominator</p> <p>1CA correct percentage</p> <p style="text-align: right;">(3)</p>	P L2



QUESTION/VRAAG 4 [30 MARKS/PUNTE]			
Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
4.1.1	Ascending order/ <i>Stygende volgorde</i> $155; 600; 600; 1\ 250; 1\ 750; 2\ 450$	1A correct values 1A correct order (2)	D L1
4.1.2	Ratio/ <i>Verhouding</i> $1\ 250 : 600$ $= 25 : 12$	1RT correct values 1M correct order 1A simplification (3)	F L2
4.1.3	Profit/ <i>Wins</i> $(R248 \times 6) - (R155 \times 6)$ $= R1\ 488 - R930$ $= R558$ <i>OR/OF</i> $R248 - R155$ $= R93$ $R93 \times 6$ $= R558$	1RT correct selling and cost price 1MA multiplying both with 6 1MCA concept of profit 1CA simplification OR/OF 1RT correct selling and cost price 1MCA concept of profit 1 MA multiplying with 6 1CA simplification (4)	F L2
4.1.4	Profit percentage / <i>Wins persentasie</i> Profit on one bat/ <i>Wins vir een kolf</i> $= R2\ 765 - R1\ 750$ $= R1\ 015$ Profit percentage/ <i>Wins persentasie</i> $\frac{\text{Profit on one bat}}{\text{Cost price}} \times 100\%$ $= \frac{R1\ 015}{1\ 750} \times 100\%$ $= 58\%$ Bran is correct/ <i>Bran is reg</i>	1MA subtracting correct values 1A simplification 1MCA dividing correct values 1CA simplification 1O correct opinion (5)	F L4



Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
4.1.5	$R1\ 250 \times 60\%$ $= R750$ $S = R1\ 250 + R750 \checkmark MCA$ $= R2\ 000 \checkmark CA$ $\checkmark RT$ OR/OF $R1\ 250 \times \frac{160}{100} \checkmark MCA$ $= R2\ 000 \checkmark CA$	1MA multiplying correct amount with 60% 1MCA adding correct values 1CA simplification 1RT correct cost price 1MCA multiplying with $\frac{160}{100}$ 1CA simplification (3)	F L2
4.2.1	Box and whisker/ <i>Mond en Snor, houerdiagram</i> $\checkmark\checkmark A$	2A correct diagram (2)	D L1
4.2.2 (a)	Maximum distance of Bran/ <i>Maksimum afstand van Bran</i> $= 14\text{km} \checkmark\checkmark A$	2A correct distance 14km (2)	D L2
4.2.2 (b)	Minimum distance of Sam/ <i>Minimum afstand van Sam</i> $= 1,5\text{km} \checkmark\checkmark A$	2A correct distance 1,5km (2)	D L2
4.2.3	Median/ <i>Mediaan</i> $9,5\text{km} \checkmark\checkmark A$	2A correct median (2)	D L1
4.2.4	Interquartile range/ <i>Interkwartielomvang</i> $= Q3 - Q1$ $\checkmark RT \quad \checkmark RT$ $= 10,5 - 6,5 \checkmark M$ $= 4,0 \text{ km} \checkmark A$ INVALID $\checkmark O$	1RT quartile 3 1RT quartile 1 1M subtracting values 1A simplification 1O verification (5)	D L3
		[30]	



QUESTION/VRAAG 5 [22 MARKS/PUNTE]			
Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
5.1.1	R1 = 0,725671 BWP OR/OF 1 BWP = R1,3778647 ✓✓A	2A correct exchange rate (2)	F L2
5.1.2	Botswana Pula	2A correct currency (2)	F L2
5.1.3	$R0,4 \text{ million} \times 40\% \checkmark \text{MA}$ $= R0,16 \text{ million} \checkmark \text{A}$ $= R400\,000 \checkmark \text{MCA}$ $R0,16 \text{ million} \times 7,48593$ $40\% \checkmark \text{CA}$ $= 1,1977488 \text{ million DZD}$ $7,48593$ $748,8 \text{ DZD}$ OR/OF $R0,4 \text{ million} \times 40\% \checkmark \text{MA}$ $R400\,000 \checkmark \text{A}$ $= R0,16 \text{ million}$ $40\% \checkmark \text{MCA}$ $\frac{R0,16 \text{ million}}{0,13352803} \checkmark \text{CA} = R160\,000$ $= 1,1982503 \text{ million DZD}$ $= \frac{R160\,000}{0,13352803}$ $=$ $1\,198\,250,285 \text{ DZD}$	1MA multiplying correct values 1A simplification 1MCA multiplying by exchange rate 1CA simplification OR/OF 1MA multiplying correct values 1A simplification 1MCA dividing by exchange rate 1CA simplification (4)	F L2
5.2.1	Yearly taxable income/Jaarlikse belasbare inkomste $R46\,031,50 \times 12 \checkmark \text{A}$ $= R552\,378 \checkmark \text{A}$	1MA multiplying correct amount with 12 1A simplification (2)	F L1
5.2.2	South African Revenue Services/ Suid-Afrikaanse Inkomstediens ✓✓A	2A correct institution <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> Accept SARS/ Aanvaar SAID </div> (2)	F L1
5.2.3	$R46\,031,50 \times 12 = R552\,378$ $115\,762 + 36\% \times (R552\,378 - 488\,700) \checkmark \text{SF}$ $115\,762 + 36\% \times 63\,678$ $115\,762 + 22\,924,08 \checkmark \text{MCA}$ $= R138\,686,08 \checkmark \text{A}$	CA from Question 5.2.1 1SF substitution in formula 1MCA correct percentage calculation 1A simplification (3)	F L3
5.2.4	$(R364 + R364 + R246) \times 12 \checkmark \text{M}$ $= R974 \times 12$ $= R11\,688 \checkmark \text{CA}$	1MA adding correct medical credits 1M multiplying by 12 1CA simplification (3)	F L2



Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
5.2.5	$R138\,686,08 - R16\,425 - R9\,444 - R11\,688$ $= R101\,129,08$ <p>VALID ✓₀</p>	<p>✓_{MA} ✓_{MCA}</p> <p>CA from Questions 5.2.3 and 5.2.4</p> <p>1MA subtracting first and second rebate 1MCA subtracting medical credits 1CA simplification 1O verification</p> <p style="text-align: right;">(4)</p>	F L4
		[22]	
		TOTAL: 150	

