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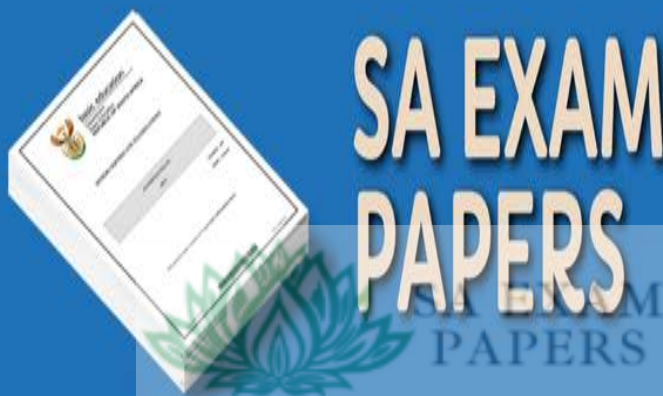


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GRADE / GRAAD 12

MATHEMATICAL LITERACY P1 /
WISKUNDIGE GELETTERDHEID VI
SEPTEMBER 2023

MARKING GUIDELINES / NASIENRIGLYNE

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 /RG /RM	Reading from the table/graph/map/diagram/document Lees vanaf tabel/grafiek/kaart/diagram/dokument
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 akkuraatheid

These marking guidelines consist of 13 pages.

Hierdie nasienriglyne bestaan uit 13 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.
- Rounding is an independent mark.
- General principle of marking, if the candidate makes one mistake he loses one mark.
- A conclusion mark can only be given if relevant calculations precedes it.

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 geneem en ekstra antwoorde gee, penaliseer vir elke ekstra item.*
- *Afronding tel as 'n afsonderlike punt.*
- *Die algemene beginsel van merk as 'n leerder een fout maak verloor hy een punt.*
- *'n Gevolgtrekkingspunt kan slegs gegee word indien relevante berekeninge dit voorgaan.*

QUESTION/VRAAG 1 [30 MARKS/PUNTE]		ANSWER ONLY FULL MARKS	
Q/V	Solution/Oplossing	Explanation/Verduideliking	T/L
1.1.1	17238723 ✓✓RT	2RT correct month (2)	F L1 E
1.1.2	Total income that Mrs T Ngomane received per month after all the deduction were made. / <i>Totale inkomste wat mev T Ngomane per maand ontvang het nadat al die aftrekkings gemaak is.</i> ✓✓A	2A correct definition (2)	F L1 E
1.1.3	Total deduction / <i>Totale aftrekkings</i> ✓RT = R8 780,74 + R2 753,92 + R2 131,00 + R16,50 + R109, 24 ✓M = R13 791,40	1RT correct values 1M adding (2)	F L1 E
1.1.4	$\frac{4,5}{100} \times R23\ 827,60$ ✓MA = R1 072,24 ✓A	1MA multiplying by 4,5% 1A simplification (2)	F L1 E
1.1.5	Total notch amount / <i>Totale salariskerfbedrag</i> ✓RT = R36 719 × 12 ✓MA = R440 628	1RT correct value 1MA multiplying by 12 (2)	F L1 E



Q/V	Solution/ <i>Oplossing</i>	Explanation/ <i>Verduideliking</i>	T/L
1.2.1	Continuous / <i>Kontinue</i> ✓✓A	2A correct classification (2)	D L1 E
1.2.2	Fisher ridge cave / <i>Fisher ridge grot</i> ✓✓RT	2RT correct cave (2)	D L1 E
1.2.3	Ascending order / <i>Stygende volgorde</i> 212,1; 238,0; 242,0; 260,2; 264,5; 311,5; 318,0; 345,5; 376,7; 686,6 ✓RT ✓A	1RT correct values 1MA ascending order (2)	D L1 E
1.2.4	Difference / <i>Verskil</i> = 345,5 – 260,2 ✓MA = 85,3 km ✓A	1MA subtracting correct values 1A simplification (2)	D L1 E
1.2.5	238,0 : 242,0 ✓RT 119 : 121 ✓CA	1RT correct values in correct order 1CA simplification (2)	D L1 M
1.2.6	5 ✓✓A	2A correct number (2)	D L1 E
1.3.1	Original Price / <i>Oorspronklike prys</i> = R99,99 + R30 ✓MA = R129,99 ✓A	1MA adding correct values 1A simplification (2)	F L1 E
1.3.2	Unit price / <i>Eenheidsprys</i> = R60 ÷ 4 ✓MA = R15 ✓A	1MA dividing R60 by 4 1A simplification (2)	F L1 E



Q/V	Solution/ <i>Oplossing</i>	Explanation/ <i>Verduideliking</i>	T/L
1.3.3	Price of one chicken / <i>Prys van een hoender</i> $= 1,25 \text{ kg} \times R59,99 \quad \checkmark \text{MA}$ $= R74,99 / R75,00 \quad \checkmark \text{A}$	1MA multiplying with 1,25 kg 1A simplification NPR (2)	F L1 E
1.3.4	Price of custard / <i>Prys van vla</i> $= R48 \times 2 \quad \checkmark \text{MA}$ $= R96 \quad \checkmark \text{A}$	1MA multiplying R48 by 2 1A simplification (2)	F L1 E
		[30]	



QUESTION / VRAAG 2 [28 MARKS / PUNTE]			
Q/V	Solution/Oplissing	Explanation/Verduideliking	T/L
2.1.1	$\frac{R220}{1,15} \checkmark \text{MA}$ $= R191,30 \checkmark \text{CA}$ $\text{VAT} / \text{BTW} = R220 - R191,30$ $= R28,70 \checkmark \text{CA}$ OR $\frac{\checkmark \text{RT}}{R220 \times \frac{15}{115}} \checkmark \text{M}$ $= R28,70 \checkmark \text{CA}$ OR $\text{VAT} / \text{BTW} = R220 - 220 \times \frac{100}{115} \checkmark \text{MA}$ $= R220 - R191,30 \checkmark \text{CA}$ $= R28,70 \checkmark \text{CA}$	1MA divide correct value by 1,15 1CA calculating price excl. VAT 1CA total VAT OR 1RT correct value 1M multiply by $\frac{15}{115}$ 1CA total VAT OR 1MA multiply correct value by $\frac{100}{115}$ 1CA calculating price excl. VAT 1CA total VAT (3)	F L2 M
2.1.2a	Before / Voor 15:00: $\checkmark \text{MA} \quad \checkmark \text{RT}$ $2 \times R220 = R440$ $2 \times R165 = R330$ $1 \times R105 = R105$ $\text{Total} = R875 \checkmark \text{CA}$ After / Na 15:00: $\checkmark \text{RT}$ $2 \times R165 = R330$ $2 \times R125 = R250$ $1 \times R80 = R80$ $\text{Total/Totaal} = R660 \checkmark \text{CA}$ $\text{Discount amount/Afslag bedrag} = R875 - R660 \checkmark \text{MCA}$ $= R215 \checkmark \text{CA}$	1MA all three correct values 1RT three correct tariffs 1CA correct total 1RT three correct tariffs 1CA correct total 1MCA subtracting values 1CA simplification (7)	F L3 D



Q/V	Solution/Oplissing	Explanation/Verduideliking	T/L
2.1.2b	$\% \text{ Saving} / \% \text{ Besparing} = \frac{R215}{R875} \times 100$ $= 24,6\%$	1CA correct fraction 1M multiplying by 100 1CA correct % saving (3)	F L2 M
2.1.3	Pensioners often live on grants/pension only; thus lower rates allow them to afford more things in life. / <i>Pensioenarisse leef dikwels slegs van toelaes/pensioen; laer tariewe laat dus toe dat hulle meer dinge in die lewe kan bekostig.</i>	2O Reason (2)	F L4 M
2.2.1	R641 900	2RT cash price (2)	F L1 E
2.2.2	$\frac{11}{100} \times R641\,900$ $= R70\,609$	1A correct percentage 1M multiplying by cash price 1CA deposit (3)	F L1 E
2.2.3	$\text{Total} = R70\,609 + (R11\,900 \times 72) + R57\,265,60$ $= R70\,609 + R856\,800 + R57\,265,60$ $= R984\,674,60$	CA from Question 2.2.2 1MCA adding deposit 1MA multiplying 11900 by 72 1M adding residual 1CA simplification (4)	F L3 M
2.2.4	Difference / <i>Verskil</i> $= R984\,674,60 - R641\,900$ $= R342\,774,60$	CA from Question 2.2.3 1MA subtracting cash price 1A difference (2)	F L2 E
2.2.5	Cash payment / <i>Kontant betaling</i> - No interest will be paid. / <i>Geen rente word betaal</i> - No residual payment will be paid. / <i>Geen res-waarde word betaal nie.</i>	1A correct payment option 1O correct reason (2)	F L4 M
		[28]	



QUESTION / VRAAG 3 [29 MARKS]		Only penalize once for omitting thousands	
Q/V	Solution/Oplossing	Explanation/Verduideliking	T/L
3.1.1	12/12 OR 12 December ✓✓RT	2RT correct day (2)	D L1 E
3.1.2	$A = 133\,514 - (16\,423 + 24\,319 + 22\,248 + 20\,344 + 17\,042 + 19\,694)$ ✓RT $= 133\,514 - 120\,070$ ✓M $= 13\,444$ ✓CA OR $A = 133\,514 - 16\,423 - 24\,319 - 22\,248 - 20\,344 - 17\,042 - 19\,694$ ✓RT ✓M $= 13\,444$ ✓CA	1RT correct values 1M subtracting correct values 1CA correct value OR 1RT correct values 1M subtracting correct values 1CA correct value (3)	D L1 M
3.1.3	Total steps / Totale treë = ✓MA $18234 + 18692 + 21549 + 19328 + 23190 + 26138 + 13189$ $= 140\,320$ ✓CA Daily average / Daaglikse gemiddeld $= \frac{140\,320}{7}$ ✓MCA $= 20\,045,7$ ✓CA $\approx 20\,046$ ✓R	1MA adding correct values 1CA total steps 1MCA dividing total by 7 1CA correct average 1R correct rounding (5)	D L3 M
3.1.4	$9\% - 5\%$ $= 4\%$ ✓MA $\frac{4}{100} \times 133\,514$ ✓MA $= 5\,340,56$ ✓CA	1MA calculating 4% 1MA multiplying correct value 1CA total steps (3)	D L2 E
3.1.5	$24\,319 + 22\,248$ ✓MA $= 46\,567$ ✓CA $\frac{46\,567}{133\,514} \times 100$ ✓M $= 34,88\%$ ✓CA No, her statement is not valid. ✓O <i>Nee, haar stelling is nie geldig nie.</i>	1MA adding correct values 1CA correct total 1M concept of percentage 1CA correct % 1O verification (5)	D L4 D



Q/V	Solution/Oplissing	Explanation/Verduideliking	T/L
3.2.1	One hundred and nineteen million six hundred ✓✓ A thousand / Een honderd en negentien miljoen seshonderd duisend.	2A correct words (2)	D L1 M
3.2.2	$10,1\% + 4,2\% + 29,8\% + 11,7\%$ ✓M $= 55,8\%$ ✓CA	1M adding correct values 1CA correct percentage (2)	P L2 E
3.2.3	$10\% - 6,2\%$ ✓M $= 3,8\%$ ✓CA	1M subtracting 1RT correct values 1CA correct percentage (3)	D L2 E
3.2.4	$\frac{29,8}{100} \times 253\,335\,900$ ✓RT ✓MA $= 75\,494\,098,2$ ✓CA $\approx 75\,500\,000$ ✓R	1RT correct percentage 1MA multiply with correct value 1CA correct number 1R correct rounding (4)	D L2 M
		[29]	



QUESTION / VRAAG 4 [35 MARKS]			
Q/V	Solution/Oplissing	Explanation/Verduideliking	T/L
4.1.1	$\checkmark$ RT $2 (15\,620) + 15\,148 \checkmark$ M $= R46\,388 \checkmark$ CA	1RT multiply correct fee by 2 1M adding correct fee 1CA correct total (3)	F L2 M
4.1.2	174 360; 175 051; 175 697; 176 640; 178 000 ; 185020; 191 181; 194 148; 224 620 $\checkmark$ M Median / Mediaan = 178 000 $\checkmark$ A	1M arranging values in order 1A finding median (2)	D L2 E
4.1.3	Mean / Gemiddeld = $\frac{1\,388\,637+A}{9} \checkmark$ MA $R172\,093 = \frac{1\,388\,637+B}{9} \checkmark$ MA $(R172\,093 \times 9) - R1\,388\,637 = B \checkmark$ S B = R160 200 $\checkmark$ CA	1MA adding correct values to R1 388 637 1MA concept of mean 1S multiply by 9 and subtract correct value 1CA mean (4)	D L3 M
4.1.4	$\frac{4}{9} \times 100 \checkmark$ A $\checkmark$ A $= 44,44\% \checkmark$ CA	1A numerator 1A denominator 1CA correct percentage (3)	P L2 E
4.1.5	$\% \text{ increase / verhoging} = \frac{178\,000-164\,470}{164\,470} \times 100\% \checkmark$ SF $= 8,2264 \checkmark$ CA $\approx 8,2\checkmark$ R	1SF correct substitution 1A denominator 1CA correct increase 1R correct rounding (4)	F L2 M
4.1.6	$\frac{7,5}{100} \times R176\,640 \checkmark$ MA $= R13\,248$ $\therefore R176\,640 + R13\,248 \checkmark$ M $= R189\,888 \checkmark$ CA OR $\frac{107,5}{100} \times R176\,640 \checkmark$ MA $\checkmark$ RT $= R189\,888 \checkmark$ CA	1MA multiplying correct value by 7,5% 1M adding values 1CA correct fee OR 1MA multiplying 107,5% 1RT correct value 1CA correct fee (3)	F L2 M



Q/V	Solution/ <i>Oplossing</i>	Explanation/ <i>Verduideliking</i>	T/L
4.1.7a	$\checkmark\checkmark A$ Money that Diego earned on an investment over a certain period of time at a certain rate. / <i>Geld wat Diego op 'n belegging oor 'n sekere tydperk teen 'n sekere koers verdien het.</i>	2A definition	F L1 E
		(2)	
4.1.7b	1 st year / <u>jaar</u> : $\frac{9,55}{100} \times R150\,000 \quad \checkmark MA$ $= R14\,325 \quad \checkmark A$ Total after 1 year / <i>Totaal na 1 jaar</i> : $R150\,000 + R14\,325$ $= R164\,325 \quad \checkmark CA$ 9 months / <i>maande</i> : $R164\,325 \times \frac{9,55}{100} \times \frac{9}{12} \quad \checkmark MA$ $= R11\,769,78$ Total after 1 year, 9 months / <i>Totaal na 1 jaar 9 maande</i> : $R164\,325 + R11\,769,78$ $= R176\,094,78 \quad \checkmark CA$ Crawford College 2023 = R178 000 No, statement incorrect / <i>Nee, stelling nie korrek</i> $\checkmark O$ OR 1 st year / <i>jaar</i> : $\checkmark A$ $1,0955 \times R150\,000 \quad \checkmark MA$ $= R164\,325 \quad \checkmark A$ Interest rate for 9 months / <i>Rentekoers vir 9 maande</i> : $9,55\% \times 9 \div 12$ $= 7,1625\% \quad \checkmark A$ $1,071625 \times R164\,325$ $= R176\,094,78 \quad \checkmark CA$ Crawford College 2023 = R178 000 No, statement incorrect / <i>Nee, stelling nie korrek</i> $\checkmark O$	1MA calculating 9,55% 1A interest 1 year 1CA first year 1MA calculating 9 months 1CA total 1O verification OR 1A calculating 1,0955 1MA multiplying 1,0955 1A first year 1A calculating 7,1625% 1CA total 2 nd year 1O verification	F L4 M
		(6)	

Q/V	Solution/ <i>Oplossing</i>	Explanation/ <i>Verduideliking</i>	T/L
4.2.1	$\text{Cost / Koste} = \overset{\check{A}}{R2\,000} + \overset{\check{A}}{R5,06}(\overset{\check{A}}{d} - 200\text{km});$ where d = distance / <i>waar d = afstand</i>	1A fixed cost 1A rate per km 1A difference in km (3)	F L2 M
4.2.2	$\overset{\check{SF}}{\text{Alama cost / koste}} = R2\,000 + R5,06 (944 - 200)$ $= R5\,764,64 \quad \check{CA}$ $\overset{\check{SF}}{\text{Enterprise cost / koste}} = R6,15 \times 944 \quad \check{SF}$ $= R5\,805,60 \quad \check{CA}$ No, Alama is more cost effective / <i>Nee, Alama is die mees ekonomiese</i> $\check{O}$	1SF substitution 1CA alama car cost 1SF substitution 1CA enterprise cost 1O verification (5)	F L4 D
		[35]	



QUESTION / VRAAG 5 [28 MARKS]			
Q/V	Solution/Oplissing	Explanation/Verduideliking	T/L
5.1.1	Manchester City ✓✓RT	2RT correct team (2)	D L1 E
5.1.2	$\frac{6}{10}$ ✓A $= 0,6$ ✓CA	1A correct numerator 1A correct denominator 1CA decimal (3)	P L2 E
5.1.3	$\checkmark M$ 19 100 000; 19 300 000; 27 100 000 ; 30 200 000; 40 200 000; 53 000 000; 72 700 000; 179 000 000 ; 364 000 000; 486 000 000 Q1 = 27 100 000 ✓A Q3 = 179 000 000 ✓A IQR / IKO = Q3 – Q1 = 179 000 000 – 27 100 000 ✓SF = 151 900 000 ✓CA = 152 000 000 ✓R	1M arranging values in order 1A finding Q1 1A finding Q3 1SF substituting into formula 1CA correct IQR 1R correct rounding [omitting millions max 5] (6)	D L3 M
5.1.4	0,051947 US \$ = R1 ✓RT $55\,000\,000\ \$ = \frac{55\,000\,000 \times 1}{0,051947}$ ✓MA = R1 058 771 440,12 ✓A OR 1 US \$ = R19,250546 ✓RT $55\,000\,000\ \$ = \frac{55\,000\,000 \times 19,250546}{1}$ ✓MA = R1 058 780 030 ✓A	1RT correct salary 1MA exchange rate concept 1A correct amount OR 1RT correct salary 1MA exchange rate concept 1A correct amount [omitting millions max 1] (3)	F L3 D
5.2.1	An amount of money that taxpayers can subtract directly from the taxes they owe, according to their age. / ✓✓A <i>'n Bedrag geld wat belastingbetalers direk kan aftrek van die belasting wat hulle skuld, volgens hul ouderdom.</i>	2A correct definition (2)	F L1 E



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