education

Department of Education
FREE STATE PROVINCE

GRADE 12

MATHEMATICAL LITERACY P1/
WISKUNDIGE GELETTERDHEID V1

JUNE 2024

FINAL
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/map/diagram/*Lees vanaf tabel/kaart/grafiek/diagram*
SF	Correct substitution in a formula/*Korrekte vervanging in formule*
O	Opinion/Explanation/Reasoning /*Opinie/Verduideliking/Redenasie*
P	Penalty, e.g. for no units, incorrect rounding off, etc./*Penalisering, bv. vir geen eenhede/verkeerde afronding, ens.*
R	Rounding off/*Afronding*
NPR	No penalty for rounding/*Geen penalisering vir afronding nie*
AO	Answer only/*Slegs antwoord*
MCA	Method with constant accuracy/*Metode met volgehoue akkuraatheid*

These marking guidelines consist of 9 pages.
Hierdie nasienriglyne bestaan uit 9 bl

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.
- Note: consistent accuracy (CA) does not apply in cases of a breakdown.
- If the candidate presents any extra solution when reading from a graph, table, layout plan and map, then penalise for every extra item presented.
- As a general marking principle, if a candidate has incurred one mistake and there is evidence of sound mathematics thereafter, then that candidate should lose one mark only

LET WEL:

- *As 'n kandidaat 'n vraag TWEE KEER beantwoord, merk slegs die EERSTE poging.*
- *As 'n kandidaat 'n antwoord van 'n vraag doodtrek (kanselleer) en nie oordoen nie, merk die doodgetrekte (gekanselleerde) poging.*
- *Volgehoue akkuraatheid (CA) word in ALLE aspekte van die nasienriglyne toegepas, dit hou op by die tweede berekeningsfout.*
- *Let wel: volgehoue akkuraatheid (CA) geld nie in die geval van 'n afbreuk nie.*
- *Wanneer 'n kandidaat aflesings vanaf 'n grafiek, tabel, uitlegplan en kaart geneem en ekstra antwoorde gee, penaliseer vir elke ekstra item.*
- *'n Algemene merkbeginsel is dat indien 'n kandidaat een fout maak en daarna voortgaan met korrekte wiskunde, dat die kandidaat slegs een punt verloor.*

QUESTION/*VRAAG* 1 [20 MARKS/*PUNTE*]	**ANSWER ONLY FULL MARKS**		
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T/L**
1.1.1	Office Imaging Solutions ✓✓A	2A correct name (2)	F L1 E
1.1.2	Salary before **benefits or allowance** are added. ✓✓O *Salaris voor voordele bygevoeg word.* **Do not accept: Salary before deductions, because it's a definition of Gross not Basic Salary.**	2O correct explanation (2)	F L1 E
1.1.3	Unemployment Insurance Fund ✓✓O *Werkloosheidsversekeringsfonds*	2O correct explanation (2)	F L1 E
1.1.4	**A** = R9 436 – R5 111 – R1 350 – R2 625 ✓RT ✓MA = R350 ✓A **OR** **A** = $\frac{1}{100}$ × R35 000 ✓MA ✓RT = R350 ✓A	1RT correct values 1MA subtracting from the total 1A simplification 1RT **R35 000** 1MA calculating a percentage 1A simplification (3)	F L1 E
1.1.5	**B** = R35 000 – R9 436 ✓MCA = R25 564 ✓CA	1 MA subtracting values 1CA simplification (2)	F L1 E

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
1.2.1	Box and whisker plot ✓✓A Snor en blaar diagram **Accept** **Box and Whisker** ✓✓A OR **Box plot** ✓✓A OR **Whisker Box**	2A correct name (2)	D L1 E
1.2.2	Median /*Mediaan* = 21,5 ✓✓A	2A correct median (2)	D L1 E
1.2.3	50% ✓✓A	2A correct percentage (2)	D L1 M
1.2.4	Difference/*Verskil* = 29 – 15 ✓MA ✓RT = 14 ✓A	1RT correct values 1MA subtracting correct values 1CA simplification (3)	D L1 E

QUESTION/*VRAAG* 2 [32 MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T/L**
2.1.1	✓✓O It is a rate/charge/amount charged per kilolitre of water used. **Tarief is 'n koers/heffing/bedrag wat per kiloliter water gehef word.*	2O correct explanation (2)	F L1 E
2.1.2	6 kℓ✓✓A	2A correct answer **NPU** (2)	F L1 M
2.1.3	First/*eerste* 6 kℓ = 6 kℓ × R9,93 ✓MA = R59,58 ✓A Next/*Volgende* 6 kℓ = 6 kl × R23,05 = R138,30 ✓CA Next/*volgende* 8 kℓ = 8 kl × R26,61 = R212,88 ✓CA Total excluding VAT/*Tottal BTW uitgesluit* = R59,58 + R138,30 + R212,88 = R410,76✓CA Total including VAT /*Totaal BTW ingesluit* $= \text{R}410{,}76 \times \frac{115}{100}$ ✓M = R472,37✓CA **OR** VAT/*BTW* $= \text{R}410{,}76 \times \frac{15}{100}$ ✓M = R61,61 Total including VAT = R410,76 + R61,261 *Totaal BTW ingesluit* = R472,37 ✓CA	1MA multiplying correct values 1A correct amount 1CA amount for next kℓ 1CA amount for last kℓ 1CA total excluding VAT 1M calculating VAT 1CA total excluding VAT 1M calculating VAT 1CA total including VAT (7)	F L3 D

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
2.2.1	✓MA Difference = R23 999,95 – R19 999,95 *Verskil* = R4 000✓A	1MA subtracting correct values 1A simplification (2)	F L1 E
2.2.2	Percentage = $\frac{R2000}{R19\,999{,}95} \times 100$ ✓A ✓A *Persentasie* = 10% ✓CA	1A numerator 1A denominator 1CA simplification **AO NPR** (3)	F L2 M
2.2.3	Number of months = 3 × 12 *Aantal maande* = 36✓A Total amount = (R930 × 36)✓M + R2 000✓M *Totale bedrag* = R35 480✓CA	1A for 36 1M multiply by instalment (R930) 1M adding deposit (R2 000) 1CA simplification (4)	F L3 M
2.2.4	✓MCA Saving = R35 480 – R19 999,95 *Spaar* = R15 480,05✓MCA	CA from 2.2.3 1MCA subtracting values 1CA simplification **AO** (2)	F L2 E
2.2.5	Paying for the item while using it.✓✓O *Betaal vir item terwyl jy dit gebruik.* **OR/*OF*** No need to have cash.✓✓O *Nie nodig om kontant te hê nie.* **OR/*OF*** Instalments are affordable.✓✓O *Paaiemente is beskostigbaar.* **OR/*OF*** Credit is insured.✓✓O *Krediet is verseker.* (Any relavant answer) *(Enige relevante antwoord)*	2O correct advantage (2)	F L4 M

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
2.3	**Simple interest - Bank A/*Enkelvoudige rente – Bank A*** Interest = R20 000 × $\frac{10}{100}$ ✓MA *Rente* = R2 000✓A Total interest = R2 000 × 3 *Totale rente* = R6 000✓CA Total amount = R20 000 + R6 000 *Totale Bedrag* = R26 000 ✓CA **Compound interest – Bank B/*Saamgestelde rente*** 1st year = R20 000 × $\frac{11{,}5}{100}$ ✓M *1ste jaar* = R2 300 = R20 000 + R2 300 = R22 300✓CA 2nd year = R22 300 × $\frac{11{,}5}{100}$ *2de jaar* = R2 564,50 = R22 300 + R2 564,50 = R24 864,50 ✓CA Bank B is cheaper. ✓O *Bank B is goedkoper* **OR/OF** Total amount = R20 000 × $\frac{111{,}5}{100}$ ✓M × $\frac{111{,}5}{100}$ ✓M *Totale bedrag* = R24 864,50✓CA Bank B is cheaper.✓O *Bank B is goedkoper*	1MA calculating interest 1A interest amount 1CA total interest for 3 years 1CA total for Bank A 1M calculating interest 1CA amount for 1st year 1CA amount for 2nd year 1O conclusion 1M multiply by 111,5 1M multiply by 111,5 1CA answer 1O conclusion (8)	F L4 D

QUESTION/*VRAAG* 3 [17 MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T/L**
3.1	Sample ✓✓A *Steekproef*	2A sample (2)	D L1 E
3.2	12 12 10 10 10 9 8 8 8 7 7 7 6 6 6 5 4 4 3 3 ✓✓A	2A arrange in descending order (2)	D L1 E
3.3	Mean/ *Gemiddeld* $= \frac{2+2+3+3+4+5+6+\cdots 12.}{20}$ ✓A $= \frac{145}{20}$ ✓A $= 7{,}25$ ✓CA	1A adding values 1A concept of mean 1CA mean (3)	D L2 M
3.4	$Q1 = \frac{5+6}{2}$ ✓MA $= 5{,}5$ ✓CA $Q3 = \frac{9+10}{2}$ $= 9{,}5$ ✓CA IQR = Q3 – Q1 ✓A = 9,5 – 5,5 = 4 ✓CA	**CA from 3.2** 1MA adding and dividing values 1CA value of Q1 1CA correct answer Q3 1A correct formula 1CA simplification (5)	D L3 D
3.5	Probability $= \frac{25}{40}$ ✓A ✓A $= 0{,}625$ ✓CA	1A numerator 1A denominator 1CA simplification **NPR** (3)	P L2 E
3.6	Laziness/ House chores/ Loadshedding ✓✓O (any other relevant answer) *Luiheid/Huistakies/Beurtkrag* *(enige ander relevante antwoord)*	2O correct opinion (2)	D L4 E

QUESTION/*VRAAG* 4 [32 MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T/L**
4.1.1	South African Revenue ServiceS ✓✓A *Suid-Afrikaanse Inkomstediens*	2A SARS in full (2)	F L1 E
4.1.2	Tax threshold = R17 235 + R9 444 ✓M *Belastingdrempel* = R26 679 ✓CA $\frac{R26\ 679}{0,18}$ ✓M = R148 216,666 = R148 217	1M adding correct rebates 1CA total rebates 1M divide with 18% (3)	F L3 D
4.1.3	Annual Medical tax credit/*Jaarlikse mediese belastinkrediet* = (R364 × 2 ×12) + (R246 ×2 × 12) ✓RT ✓M ✓M = R8 736 + R5 904 = R14 640 ✓CA **OR/*OF*** Annual Medical tax credit/*Jaarlikse meidese belastingkrediet* = (R364 + R246) ✓RT = R610 × 2 × 12 ✓M ✓M = R14 640 ✓CA	1RT correct values (364 and 246) 1M multiply by 2 1M multiply by 12 1CA simplification 1RT correct values (364 and 246) 1M multiply by 2 1M multiply by 12 1CA simplification (4)	F L3 M

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
4.1.4	Annual income = R40 165 × 12 *Jaarlikse inkomste* = R481 980 ✓A Annual pension = R481 980 × $\frac{7,5}{100}$ ✓MA Jaarlikse pensioen = R36 148,50 ✓CA Annual taxable income = Annual income – Annual pension *Jaarlikse belasbare inkomste = Jaarlikse inkomste – jaarlikse pensioen* = R481 980 – R36 148,50 = R445 831,50✓CA He is correct.✓O *Hy is reg.* **OR/*OF*** Monthly pension = R40 165 × $\frac{7,5}{100}$ ✓MA *Maandelikse persioen* = R3 012,38 Annual pension = R3 012,38 × 12 *Jaarlikse pensioen* = R36 148,50 ✓CA Annual income = R40 165 × 12 *Jaarlikse inkomste* = R481 980 ✓A Annual taxable income = Annual income – Annual pension *Jaarlikse belasbare inkomste = Jaarlikse inkomste – Jaarlikse pensioen* = R481 980 – R36 148,50 = R445 831,50✓CA He is correct.✓O *Hy is reg.*	1A annual income 1MA multiply by 7,5% 1CA annual pension CA annual taxable income 1O conclusion 1MA multiply by 7,5% 1CA annual pension 1CA annual income CA annual taxable income 1O conclusion (5)	F L3 M

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
4.1.5	Annual income tax /*Jaarlikse inkomste belasting* = R77 362 + 31% of income above R370 500 ✓A = R77 362 + [0,31 × (R445 831,50 – R370 500)] ✓SF = R77 362 + (0,31 × R75 331,50) = R77 362 + R23 352,77 = R100 714,77 ✓CA = R100 714,77 – R17235 – R9444 ✓M = R74 035,77 – R14 640 ✓M = R59 395,77 ✓CA	**CA from 4.1.3 and 4.1.4** 1A correct tax bracket 1SF substitution 1CA simplification 1M subtract both rebates 1M subtract MTC 1CA income tax (6)	F L3 M
4.2.1	Discreet data ✓✓A *Diskrete data*	2A correct type of data (2)	D L1 E
4.2.2	Gold ✓✓A *Goud* *OR* 288 000 0000 OR 288 million	2A correct type (2)	D L1 E
4.2.3	Median/*Mediaan* = 7,2 16,4 17,5 70,5 101,3 258,9 262,9 ✓MA = 70,5 million tons/*miljoen ton* ✓CA	1MA arranging values 1CA median **AO** **NPU** (2)	D L2 M
4.2.4	$P = \frac{2}{7} \times 100$ ✓A ✓A = 28,571% ✓CA	1A numerator 1A denominator 1CA simplification **AO** **NPR** (3)	P L2 M
4.2.5	R2,1 billion/*miljard* ✓✓A	2A correct mode (2)	D L1 E