education

Department:
Education
North West Provincial Government
REPUBLIC OF SOUTH AFRICA

PROVINCIAL ASSESSMENT
PROVINSIALE ASSESSERING

GRADE/*GRAAD 10*

MATHEMATICS P1/*WISKUNDE V1*

NOVEMBER 2024

MARKING GUIDELINES/NASIENRIGLYNE

MARKS/*PUNTE*: 100

TIME/*TYD*: 2 hours/*uur*

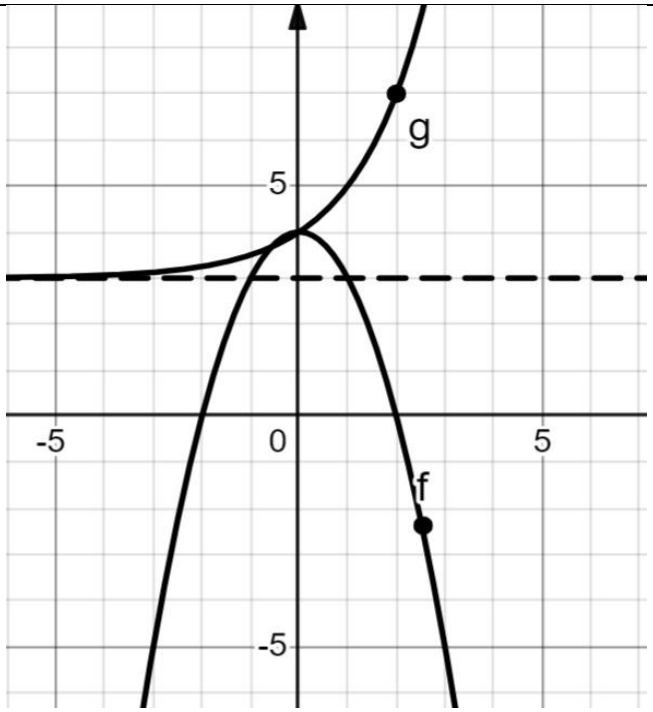
These marking guidelines consists of 7 pages.
Hierdie nasienriglyne bestaan uit 7 bladsye.

Please turn over/*Blaai om asseblief*

QUESTION/*VRAAG 1*		
1.1.1	$x^2 - 16x + 15$ $= (x - 1)(x - 15)$	✓ answer/*antwoord* (1)
1.1.2	$a(6a + 2b) - 3(3a + b)$ $= 2a(3a + b) - 3(3a + b)$ $= (3a + b)(2a - 3)$	✓ common factor/ *gemeenskaplike faktor* ✓ answer/*antwoord* (2)
1.2.1	$(3^3)^{\frac{2}{3}}$ / $\sqrt[3]{(3^3)^2}$ $= 3^2$ $=9$ OR / *OF* $(\sqrt[3]{27})^2$ $= 3^2$ $=9$	✓ $\sqrt[3]{(3^3)^2}$ ✓ 9 ✓ $(\sqrt[3]{27})^2$ ✓ 9 (2)
1.2.2	$\frac{x+3}{x-3} \times \frac{x^3-27}{x^2-9} \times \frac{x-3}{x^2+3x+9}$ $= \frac{x+3}{x-3} \times \frac{(x-3)(x^2+3x+9)}{(x-3)(x+3)} \times \frac{x-3}{x^2+3x+9}$ $=1$	✓ $\times \frac{x-3}{x^2+3x+9}$ ✓ $(x-3)(x^2+3x+9)$ ✓ $(x-3)(x+3)$ ✓ answer/*antwoord* (4)
1.2.3	$\frac{3^{x+1}(1-3)}{3^x(3^2+1)}$ / $\frac{3^x(3-3^2)}{3^x(3^2+1)}$ $= \frac{3^1(-2)}{10}$ $= \frac{(-6)}{10}$ $= -\frac{3}{5}$ OR/*OF* $\frac{3^x.3 - 3^x.3^2}{3^x.3^2 + 3^x}$ $= \frac{3^x(3-3^2)}{3^x(3^2+1)}$ $= \frac{-6}{10}$ $= -\frac{3}{5}$	✓ common factor numerator/ *gemeenskaplike faktor teller* ✓ common factor denominator *gemeenskaplike faktor noemer* ✓ simplifying/*vereenvoudig* ✓ answer/*antwoord* ✓ common factor numerator/ *gemeenskaplike faktor teller* ✓ common factor denominator *gemeenskaplike faktor noemer* ✓ simplifying/*vereenvoudig* ✓ answer/*antwoord* (4)
		[13]

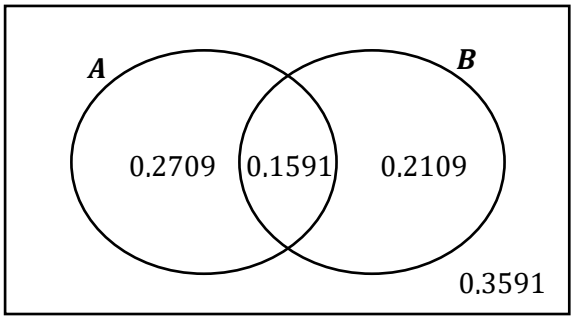
QUESTION/*VRAAG 2*		
2.1.1	$2.3^{2x} = 2.3^2$ $3^{2x} = 3^2$ $2x = 2$ $x = 1$	✓ factorising/*faktoriseer* ✓ simplifying/*vereenvoudig* ✓ simplifying/*vereenvoudig* ✓ answer/*antwoord* (4)
2.1.2	$2x - 1 \geq 3(2x + 1)$ $2x - 1 \geq 6x + 3$ $-4x \geq 4$ $x \leq -1$	✓ simplifying /*vereenvoudig* ✓ multiplication brackets ✓ simplifying/*vereenvoudig* ✓ answer/*antwoord* (4)
2.1.3	$2x^2 - x - 10 = 0$ $(2x - 5)(x + 2) = 0$ $2x - 5 = 0$ of $x + 2 = 0$ $x = \frac{5}{2}/2\frac{1}{2}$ / 2,5 or / *of* $x = -2$	✓ factorising/*faktoriseer* ✓ equal to 0/*stel gelyk aan 0* ✓✓answers/*antwoorde* (4)
2.2	$(x + 5)(x - 5) = x^2 - 25$ $(x + 1)(x - 25) = x^2 - 24x - 25$ $-24x$ must be added at $(x + 5)(x - 5)$ $-24x$ *moet by* $(x + 5)(x - 5)$ *bygetel word*	✓ $x^2 - 25$ ✓ $x^2 - 25$ ✓ $-24x$ ✓ answer/*antwoord* (4)
2.3	$y = 3x - 2$..... (1) $7x - 2y = 8$ ..... (2) $7x - 2(3x - 2) = 8$ $7x - 6x + 4 = 8$ $x = 4$ $y = 3(4) - 2$ $y = 10$	✓ $3x - 2$ ✓ substitution/*vervanging* ✓ $x = 4$ ✓ $y = 10$ (4)
		[20]
QUESTION/*VRAAG 3*		
3.1.1	$T_n = 3n$	✓ 3*n* (1)
3.1.2	$T_{300} = 3(300)$ $T_{300} = 900$	✓ substitution/*vervanging* ✓ answer/*antwoord* CA from/*van* 3.1.1 (2)
3.1.3	$1500 = 3n$ $n = 500$	✓ substitution/*vervanging* ✓ answer/*antwoord* CA from /*van* 3.1.1 (2)
3.2	TERMSTERMS..repeat after the fifth letter.	✓ see pattern/*sien patroon*

	TERMSTERMS..herhaal na die vyfde letter. $\frac{383}{5} = 76\ remainder\ 3$ The 383rd letter will be a R / *Die 383ste letter sal 'n R wees.*	✓ ÷ 5 ✓ answer/*antwoord* (3)
3.3.1	36 ; 43	✓✓answers/*antwoorde* (2)
3.3.2	Add 7 to the previous term / *Tel 7 by die vorige term*.	✓✓answer/*antwoord* (2)
		[12]
QUESTION/*VRAAG 4*		
4.1	3 x $ 450 = $ 1 350 $ 1 350 x R 9,10 = R 12 285	✓ 3 x $ 450 = $ 1 350 ✓ $ 1 350 x R 9,10 ✓ answer/*antwoord* (3)
4.2.1	Balance/*Balance* = R20 000 – R3000 – R2000 = R15 000 Total installments/*Totale paaiemente* = 24 x R900 = R21600 Total interest paid = Total installments – Balance *Totale rente betaal= Totale paaiemente - Balans* = R21 600 – R15 000 = R6 600	✓ 20 000 – 3000 – 2000 ✓ answer/*antwoord* ✓ 24 x R900 ✓ Total installments/*Totale paaiemente* ✓ R21 600 – R15 000 ✓ answer/*antwoord* (6)
4.2.2	$A = P(1 + ni)$ $21\ 600 = 15\ 000(1 + 2i)$ $\frac{21\ 600}{15\ 000} - 1 = 2i$ $0{,}22 = i$ $r = 22\ \%$	✓ formula/*formule* ✓ substitution/*invervanging* ✓ simplification/*vereenvoudig* ✓ answer/*antwoord* (4)
		[13]

QUESTION/*VRAAG 5*		
5.1		✓ $f(x)$: intercepts/*afsnitte* ✓ $f(x)$: shape & turning point *vorm en draaipunt* ✓ $g(x)$: intercept/*afsnit* ✓ $g(x)$: shape/*vorm* ✓ $g(x)$: asymptote/*asimptote* (5)
5.2	TP (0;4)	✓ answer/*antwoord* (1)
5.3	The graph of f is reflected in the x – axis / OR f is reflected in the line $y = 0$.	✓ reflected/*refleksie* ✓ x-axis/*as* ✓ reflected/*refleksie* ✓ $y = 0$ (2)
		[8]
QUESTION/*VRAAG 6*		
6.1	$c = -4$ $m = \frac{-8}{-4} = 2$ OR /*OF* Substitute/*Vervang* A (4;4) $g(x) = mx - 4$ $4 = m(4) - 4$ $8 = 4m$ $m = 2$ OR / *OF*	✓ $c = -4$ ✓ $m = 2$ ✓ substitution/*vervanging* ✓ $m = 2$

	$m = \frac{\Delta y}{\Delta x}$ $= \frac{4-(-4)}{4-0}$ $= \frac{8}{4}$ $= 2$	✓ substitution/*vervanging* ✓ $m = 2$ (2)
6.2	$y \in R; y \neq -2$	✓ $y \in R$ ✓ $y \neq -2$ (2)
6.3	$\frac{4}{x} - 2 = 2x - 4$ $4 - 2x = 2x^2 - 4x$ $0 = 2x^2 - 2x - 4$ B (2; 0) E $(-1; -6)$	✓ $\frac{4}{x} - 2 = 2x - 4$ ✓ $0 = 2x^2 - 2x - 4$ ✓ B (2; 0) ✓ E $(-1; -6)$ (4)
6.4	$-1 \leq x < 0$ or $x \geq 2$	✓ $-1 \leq x < 0$ ✓ $x \geq 2$ CA from/*van* 6.3 (2)
6.5	$f(4) = \frac{4}{4} - 2$ $= -1$ $AC = 4 + 1$ $= 5$ units/*eenhede*	✓ $f(4) = \frac{4}{4} - 2$ ✓ -1 ✓ $AC = 4 + 1$ $= 5$ (3)
		[13]
QUESTION/*VRAAG 7*		
7.1	$y = -2$	✓ $y = -2$ (1)

7.2	$a = 1$ $q = -2$ $0 = (1)b^1 - 2$ $\therefore b = 2$ $\therefore h(x) = 2^x - 2$	✓ $a = 1$ ✓ $q = -2$ ✓ $b = 2$ ✓ $h(x) = 2^x - 2$ CA from/*van* 7.1 (4)

7.3	$y = -1$ OR / *OF* $2^0 - 2$ $= -1$	✓ $y = -1$ (1)
		[6]
QUESTION/*VRAAG 8*		
8.1	$P(A) + P(B) = 0{,}43 + 0{,}37$ $= 0{,}80$ Not complementary events / *Nie komplimentêre gebeurtenisse*. $P(A) + P(B) \neq 1$	✓ $0{,}43 + 0{,}37$ ✓ conclusion/*gevolgtrekking* (2)
8.2	$P(A \text{ and } B) \neq 0$ Not mutually exclusive events/ *Nie onderling uitsluitende gebeurtenisse*.	✓ $P(A \text{ and } B) \neq 0$ ✓ conclusion/*gevolgtrekking* (2)
8.3		✓ 0,2709 ✓ 0,1591 ✓ 0,2109 ✓ 0,3591 (4)
		[8]
QUESTION/VRAAG 9		
9.1	$P(Not\ A) = 1 - P(A)$ / $P(Nie\ A) = 1 - P(A)$ $= 1 - \frac{2}{3}$ $= \frac{1}{3}$	✓ $1 - \frac{2}{3}$ ✓ $\frac{1}{3}$ (2)
9.2	$P(B) = 1 - P(B^1)$ $= 1 - \frac{3}{5}$ $= \frac{2}{5}$	✓ $1 - \frac{3}{5}$ ✓ $\frac{2}{5}$ (2)
9.3	$P(A \text{ or/of } B) = P(A) + P(B) - P(A \text{ and/en } B)$ $\frac{4}{7} = \frac{2}{3} + \frac{2}{5} - P(A \text{ and/en } B)$ $P(A \text{ and/en } B) = \frac{52}{105}$	✓ formula/*formule* ✓ substitution/*substitusie* ✓ answer/*antwoord* (3)
		[7]
		TOTAL/*TOTAAL*: 100