



GAUTENG PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

PROVINCIAL EXAMINATION

PROVINSIALE EKSAMEN

JUNE/JUNIE 2024

GRADE/GRAAD 10

MARKING GUIDELINES/ *NASIENRIGLYNE*

MATHEMATICS/WISKUNDE (PAPER/VRAESTEL 1)
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6 pages/bladsye

NOTE/LET WEL:

- If a candidate answers a question TWICE, mark only the FIRST attempt.
As 'n kandidaat 'n vraag TWEE keer beantwoord, sien slegs die EERSTE poging na.
- If a candidate crossed OUT an answer and did not redo it, mark the crossed-out answer.
Indien 'n kandidaat 'n antwoord DOODTREK en dit nie OORDOEN nie, sien die deurgehaalde antwoord na.
- Consistent accuracy (CA) applies to ALL aspects of the marking guidelines.
Konsekwente akkuraatheid (CA) is van toepassing op ALLE aspekte van die nasienriglyne.
- Assuming values/answers in order to solve a problem is UNACCEPTABLE.
Aannames van waardes/antwoorde om 'n probleem op te los, is ONAANVAARBAAR.

MARKING GUIDELINES/ NASIENRIGLYNE	MATHEMATICS/WISKUNDE (PAPER/VRAESTEL 1) GRADE/GRAAD 10
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QUESTION/VRAAG 1		
1.1	$x = 4$	✓ answer/antwoord (1)
1.2	$x = 0$ or/of $x = 3$	✓ any one/enigeen (1)
1.3	$x = 1$ or/of $x = 2$	✓ any one/enigeen (1)
		[3]

QUESTION/VRAAG 2

2.1	2.1.1	$2b(b-5c)^2$ $= 2b(b^2 - 10bc + 25c^2)$ $= 2b^3 - 20b^2c + 50bc^2$	✓ square the binomial/kwadreer binoom ✓ distribute 2b/versprei 2b	(2)
	2.1.2	$\frac{3^x - 2 \cdot 3^{x-1}}{3^{x+2} + 2 \cdot 3^{x+1}}$ $= \frac{3^x(1 - 2 \cdot 3^{-1})}{3^x(3^2 + 2 \cdot 3)}$ $= \frac{1}{15}$ $= \frac{1}{45}$	✓ factorise numerator/ faktoriseer teller ✓ factorise denominator/ faktoriseer noemer ✓ final answer/finale antwoord	(3)
2.2		$a^2 - ax - 1 + x$ $= a^2 - 1 - ax + x$ $= (a+1)(a-1) - x(a-1)$ $= (a-1)(a+1-x)$	✓ sum and difference/ som en verskil ✓ factorise/faktoriseer ✓ factorise/faktoriseer	(3)
				[8]

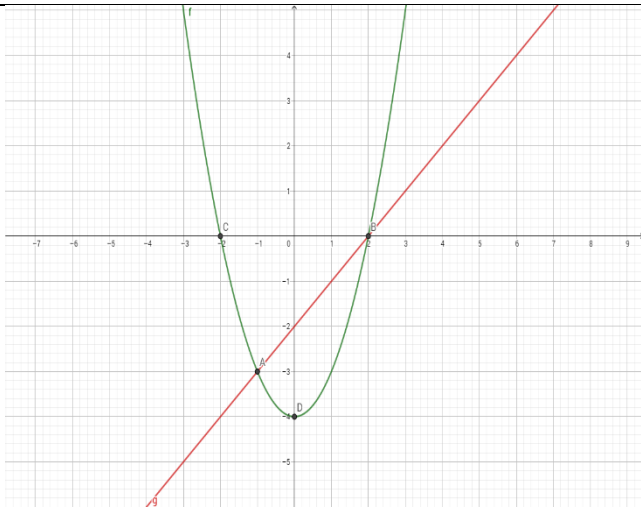
QUESTION/VRAAG 3

3.1	3.1.1	$3x^2 - 2x = 0$ $x(3x - 2) = 0$ $x = 0$ or/of $x = \frac{2}{3}$	✓factorise/faktoriseer ✓both x values/ beide x waardes	(2)
	3.1.2	$\frac{7}{3-x} = \frac{5}{x+3} + \frac{4}{x^2-9}$ $\frac{-7}{x-3} = \frac{5}{x+3} + \frac{4}{(x+3)(x-3)}$ LCD/KGV $(x+3)(x-3)$; $x \neq \pm 3$ $-7(x+3) = 5(x-3) + 4$ $-7x - 21 = 5x - 15 + 4$ $-12x = 10$ $x = -\frac{5}{6}$	✓factorise/faktoriseer ✓change of sign/ verander teken ✓ $-7(x+3) = 5(x-3) + 4$ ✓answer/antwoord	(4)
	3.1.3	$16 \cdot 2^{x-1} = (0,5)^{x-4}$ $2^4 \cdot 2^{x-1} = (2^{-1})^{x-4}$ $2^{x+3} = 2^{-x+4}$ $x+3 = 4-x$ $2x = 1$ $x = \frac{1}{2}$	✓ $2^4 \cdot 2^{x-1}$ ✓ $(2^{-1})^{x-4}$ ✓ $x+3 = 4-x$ ✓answer / antwoord	(4)
3.2	3.2.1	$2 - \frac{3x}{4} < 14$ $\frac{-3x}{4} < 12$ $x > -16$	✓subtract 2/trek 2 af ✓multiply $\frac{-4}{3}$ / vermenigvuldig met $\frac{-4}{3}$	(2)
	3.2.2	$x = 1$	answer/antwoord	(1)

3.3	$2x + y = 8$ and/en $2y + 3x = -2$(2) $y = 8 - 2x$(1) subst (1) into (2)/ <i>vervang (1) in (2)</i> $2(8 - 2x) + 3x = -2$ $16 - 4x + 3x = -2$ $-x = -18$ $x = 18$ subst $x = 18$ into (1)/ <i>vervang $x = 18$ in (1)</i> $y = 8 - 2(18)$ $y = -28$	✓equation (1)/ <i>vergelyking (1)</i> ✓subst (1) into (2) <i>vervang (1) in (2)</i> ✓x value/x – <i>waarde</i> ✓y value/y – <i>waarde</i>	(4)
			[17]

QUESTION/VRAAG 4

4.1	Sub point A $(-1; -3)$ /Vervangpunt A $(-1; -3)$ $-3 = a + c$ eq 1/vgl 1 Sub point B $(2; 0)$ /vervangpunt B $(2; 0)$ $0 = 4a + c$ eq 2/vgl 2 eq 1 – eq 2/vgl 1 – vgl 2 $-3 = -3a$ $a = 1$ sub in eq 1/ <i>verv in vgl 1</i> $-3 = 1 + c$ $c = -4$ or sub in eq 2/ <i>of vervang in vgl 2</i> $0 = 4 + c$ $c = -4$	✓✓ correct sub of both points <i>korrekte verv van beide punte</i> ✓ $a = 1$ ✓ $c = -4$	(4)

4.2	$b = \frac{y_1 - y_2}{x_1 - x_2}$ $b = \frac{-3 - 0}{-1 - 2}$ $b = 1$ $g(x) = x + q \quad \text{sub/vervang } (-1; -3)$ $-3 = -1 + q$ $q = -2$ OR/OF $\text{sub } (2; 0)/\text{vervang } (2; 0)$ $0 = 2 + q$ $q = -2$ Method 2/Metode 2 $\text{Sub } (2; 0) \text{ into } g/\text{Vervang } (2; 0) \text{ in } g$ $0 = 2b + q \quad \dots\dots \text{eq 1/vgl 1}$ $\text{Sub } (-1; -3) \text{ into } g/\text{verv } (-1; -3) \text{ in } g$ $-3 = -b + q \quad \dots\dots \text{eq 2/vgl 2}$ $\text{eq 1} - \text{eq 2/vgl 1} - \text{vgl 2}$ $3b = 3$ $b = 1$ $\text{Sub/vervang } (2; 0) \text{ into/in } g(x) = x + q$ $0 = 2 + q$ $q = -2$ OR/OF $\text{Sub/vervang } (-1; -3) \text{ into/in } g$ $-3 = -1 + q$ $q = -2$	✓ correct answer for b/korrekte antwoord vir b ✓ sub (-1;-3) or (2;0)/vervang (-1;-3) of (2;0) ✓ correct answer for q/korrekte antwoord vir q ✓ correct answer for b/korrekte antwoord vir b ✓ sub/verv (-1;-3) OR/OF (2;0) ✓ correct answer for q/korrekte antwoord vir q	(3)
4.3		✓✓✓ x and y intercepts for f/x en y-afsnitte van f ✓✓✓ x and y intercepts for g/x en y-afsnitte van g.	(6)
4.4	$-2 - (-4) = 2$	✓ $-2 - (-4)$ ✓ answer/antwoord	(2)

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4.5	$-1 \leq x \leq 2$ Or $x \in [-1; 2]$	✓ mark for values <i>punt vir waardes</i> ✓ mark for correct notation ONLY if values were correct./ <i>punt vir notasie</i> SLEGS as waardes <i>korrek was.</i>	(2)
			[17]

QUESTION/VRAAG 5

5.1	$2^{x+2} + k = 2^x \cdot 2^2 + k$ $= 4 \cdot 2^x + k$	✓ mark for splitting exponent/ <i>punt vir opbreek</i> van eksponente ✓ answer/ <i>antwoord</i>	(2)
5.2	Sub point (0;5)/ <i>vervangpunt (0;5)</i> $5 = 4 \cdot 2^0 + k$ $k = 1$	✓ sub point correctly/ <i>vervang</i> <i>punt korrek</i> ✓ correct answer/ <i>korrekte</i> <i>antwoord</i>	(2)
5.3	$y = 1$	✓ answer/ <i>antwoord</i>	(1)
			[5]

TOTAL/TOTAAL [50]