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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)

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.

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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	$\frac{3^x-2.3^{x-1}}{3^{x+2}+2.3^{x+1}}$ $= \frac{3^x(1-2.3^{-1})}{3^x(3^2+2.3)}$ $= \frac{\frac{1}{3}}{15}$ $= \frac{1}{45}$	✓ 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]

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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	$16.2^{x-1} = (0,5)^{x-4}$ $2^4.2^{x-1} = (2^{-1})^{x-4}$ $2^{x+3} = 2^{-x+4}$ $x+3 = 4-x$ $2x = 1$ $x = \frac{1}{2}$	✓ $2^4.2^{x-1}$ ✓ $(2^{-1})^{x-4}$ ✓ $x+3 = 4-x$ ✓ *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)

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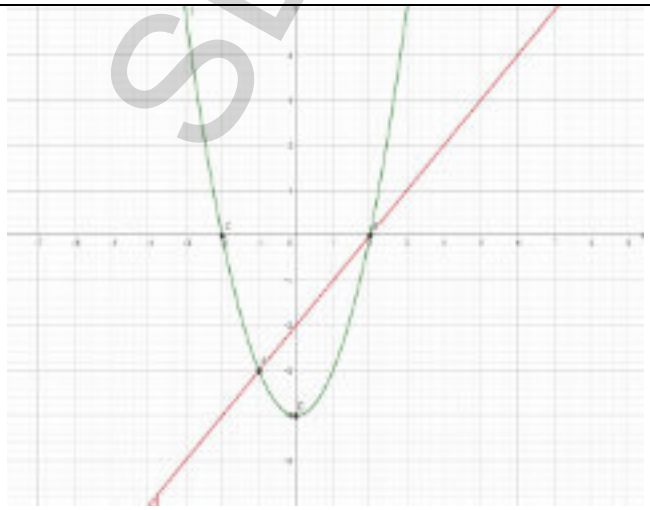
3.3	$2x+y=8$ and/*en* $2y+3x=-2$ (2) $y=8-2x$ (1) subst (1) into (2)/*vervang (1) in (2)* $2(8-2x)+3x=-2$ $16-4x+3x=-2$ $-x=-18$ $x=18$ subst $x=18$ into (1)/*vervang* $x=18$ *in (1)* $y=8-2(18)$ $y=-28$	✓ equation (1)/ *vergelyking (1)* ✓ subst (1) into (2) *vervang (1) in (2)* ✓ x value/$x-waarde$ ✓ y value/$y-waarde$	(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/$verv\ in\ vgl\ 1$ –3 = 1 + c c = –4 or sub in eq 2/*of vervang in vgl* 2 0 = 4 + c c = – 4	✓ ✓ correct sub of both points *korrekte verv van beide punte* ✓ $a=1$ ✓ $c=-4$	(4)

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4.2	$b=\frac{y_1-y_2}{x_1-x_2}$ $b=\frac{-3-0}{-1-2}$ $b=1$ $g(x)=x+q$ sub/*vervang* (-1;-3) $-3=-1+q$ $q=-2$ **OR/*OF*** sub (2;0)/*vervang* (2;0) $0=2+q$ $q=-2$ Method 2/*Metode 2* Sub (2;0) into g/*Vervang (2;0) in g* $0=2b+q$ …… eq 1/*vgl 1* Sub (-1;-3) into g/*verv (-1;-3) in g* $-3=-b+q$ ….. eq 2/*vgl 2* eq 1 – eq 2/$vgl\ 1-vgl\ 2$ $3b=3$ $b=1$ Sub/*vervang* (2;0) into/in $g(x)=x+q$ $0=2+q$ $q=-2$ **OR/OF** Sub/*vervang* (-1;-3) 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 *punt vir waardes* ✓ mark for correct notation ONLY if values were correct./*punt vir notasie SLEGS as waardes korrek was.*	(2)
			[17]

QUESTION/*VRAAG* 5

5.1	$2^{x+2} + k = 2^x.2^2 + k$ $= 4.2^x + k$	✓ mark for splitting exponent/*punt vir opbreek van eksponente* ✓ answer/*antwoord*	(2)
5.2	Sub point (0;5)/*vervangpunt* (0;5) $5 = 4.2^0 + k$ $k = 1$	✓ sub point correctly/*vervang punt korrek* ✓ correct answer/*korrekte antwoord*	(2)
5.3	$y = 1$	✓ answer/*antwoord*	(1)
			[5]

TOTAL/*TOTAAL* [50]

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