May/June 2026

Western Cape Government

METRO NORTH EDUCATION DISTRICT

SCHOOL-BASED ASSESSMENT

JUNE DISTRICT COMMON EXAMINATION

MATHEMATICS P1/ *Wiskunde V1*

MARKING GUIDELINE FINAL/ *Nasienriglyne FINAAL*

JUNE 2026

This Marking Guideline consists of 13 pages

GENERAL GUIDELINES FOR MARKING

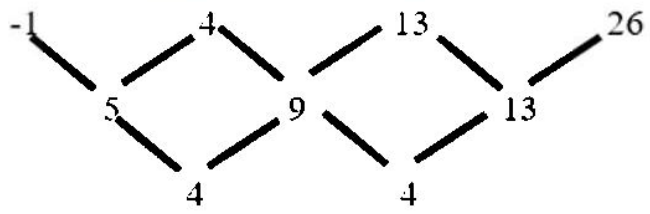
- If a learner makes more than one attempt at answering a question and does not cancel any of them out, only the first attempt will be marked irrespective of which of the attempt(s) may be the correct answer.
- Consistent Accuracy (CA) marking regarding calculations will be followed in the following cases:
  - Sub-question to sub-question: When a certain variable is incorrectly calculated in one sub-question and needs to be substituted into another sub-question full marks can be awarded for the subsequent sub-questions provided the methods used are correct and the calculations are correct.
- Assuming values/answers in order to solve a problem is unacceptable.

QUESTION/VRAAG 1

1.1.1	$x(3x-2)=0$ $x=0$ or $x=\frac{2}{3}$	✓ factors/formula ✓✓ both answers (3)
1.1.2	$x^2-7x+3=0$ $x=\frac{-(-7)\pm\sqrt{(-7)^2-4(1)(3)}}{2(1)}$ $x=6{,}54$ or $x=0{,}46$	✓ standard form ✓ substitution into correct formula ✓✓ answers (4)
1.1.3	$x^2-5x+4-10\geq 0$ $x^2-5x-6\geq 0$ $(x-6)(x+1)\geq 0$ $x\leq -1$ or $x\geq 6$	✓ standard form ✓ critical values ✓✓ answer (4)
1.1.4	$x-1=\sqrt{x+5}$ $(x-1)^2=\left(\sqrt{x+5}\right)^2$ $x^2-2x+1=x+5$ $x^2-3x-4=0$ $(x-4)(x+1)=0$ $x=4$ or $x\neq -1$	✓ isolating surd ✓ squaring both sides ✓ standard form ✓ answer with selection (4)

1.2	$30x + 10y = 220$ $3x + y = 22$ $y = 22 - 3x$…….. (1) $y = x^2 + 4$…….. (2) $x^2 + 4 = 22 - 3x$ $x^2 + 3x - 18 = 0$ $(x + 6)(x - 3) = 0$ $x \neq -6$ or $x = 3$ $y = 22 - 3(3)$ $\therefore y = 13$ 3 Adult tickets and 13 child tickets	✓ $30x + 10y = 220$ ✓ $y = x^2 + 4$ ✓ substitution/equating ✓ standard form ✓ selecting $x = 3$ ✓ $y = 13$ (6)
1.3	$P^{\frac{2}{x}} = 3 \times 2^2$ $P^{\frac{2}{x}} = P^{\frac{2}{k}} \times P^{\frac{8}{y}}$ $\frac{2}{x} = \frac{2}{k} + \frac{8}{y}$ $\frac{2}{x} = \frac{2y + 8k}{ky}$ $x = \frac{ky}{4k + y}$	✓ $P^{\frac{2}{x}} = 3 \times 2^2$ ✓ substitution ✓ exponent rules ✓ simplification (4)
		[25]

QUESTION/VRAAG 2

2.1.1	43	✓ answer (1)
2.1.2	 $2a = 4$ $a = 2$ $3a + b = 5$ $b = -1$ $a + b + c = -1$ $c = -2$ $T_n = 2n^2 - n - 2$	✓ $a = 2$ ✓ $b = -1$ ✓ $c = -2$ ✓ $T_n = 2n^2 - n - 2$ (4)

2.1.3	$2n^2 - n - 2 = 2413$ $2n^2 - n - 2415 = 0$ $(n - 35)(2n + 69) = 0$ $n = 35 \quad$ or $\quad n \neq -\frac{69}{2}$	✓ $T_n = 2413$ ✓ standard form ✓ answer with selection (3)
2.2	For AP: $T_2 - T_1 = T_3 - T_2$ $a - 6 = b - a$ $2a - 6 = b \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$ For GP: $\frac{T_2}{T_1} = \frac{T_3}{T_2}$ $\frac{b}{a} = \frac{16}{b}$ $b^2 = 16a \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (2)$ $(2a - 6)^2 = 16a$ $4a^2 - 24a + 36 - 16a = 0$ $4a^2 - 40a + 36 = 0$ $a^2 - 10a + 9 = 0$ $(a - 1)(a - 9) = 0$ $a = 1 \quad$ or $\quad a = 9$ $b = 2(9) - 6 = 12$ Or $b = 2(1) - 6 = -4$	✓ equation 1 ✓ equation 2 ✓ standard form ✓ **both** a values ✓ **both** b values (5)
		[13]

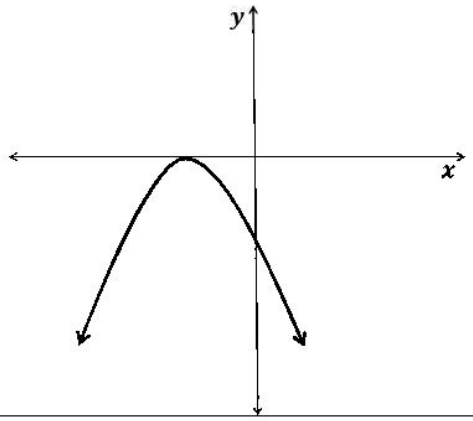
QUESTION/VRAAG 3

3.1.1.	$\frac{p}{-\frac{1}{9}} = \frac{-1}{p}$ $p^2 = \frac{1}{9}$ $p = \pm\frac{1}{3}$ OR GM: $p = \pm\sqrt{\left(-\frac{1}{9}\right)(-1)}$ $= \pm\frac{1}{3}$	✓ ratio ✓ ✓ answer (3) ✓ $= \pm\sqrt{\left(-\frac{1}{9}\right)(-1)}$ ✓✓ answer (3)

3.1.2	$-\frac{1}{9}:\frac{1}{3}\ ;\ -1$ $r=-3$ $T_n=ar^{n-1}$ $T_n=\left(-\frac{1}{9}\right)(-3)^{10}$ $T_n=-3^8$ or -6561	✓ r ✓substitute into correct formula ✓ answer (3)
3.1.3	Positive terms: $\frac{1}{3}\ ;3\ ;27$ $a=\frac{1}{3}$ and $r=9$ $\sum_{n=1}^{16}\left(\frac{1}{3}\right)9^{n-1}$ or $\sum_{n=0}^{15}\left(\frac{1}{3}\right)9^{n}$ $\sum_{n=1}^{16}3^{2n-3}$ or $\sum_{n=0}^{15}3^{2n-1}$	✓ sequence ✓ a and r ✓ answer (3)
3.1.4	No, the series is not convergent $r=9$ and for convergence $-1<r<1$	✓ No ✓ reason (2)
3.2	$r=3 \quad a=1$ $T_n=3^{n-1}$ But, $T_n=t$ $3^{n-1}=t$ $3^n=3t$ $S_n=\frac{1(3^n-1)}{3-1}$ $S_n=\frac{3t-1}{2}$	✓ $T_n=3^{n-1}$ ✓ $3^n=3t$ ✓ substitution into correct formula ✓ answer (4)
		[15]

QUESTION/VRAAG 4

4.1.1	$f(x) = -x^2 + 6x - 5$ $x = -\frac{6}{2(-1)}$ $x = 3$ OR $f'(x) = 0$ $-2x + 6 = 0$ $x = 3$ $y = -(3)^2 + 6(3) - 5$ $y = 4$ $A(3; 4)$	✓ method for determining x ✓ method for determining y (2)
4.1.2	Range: $y \leq 4$ Or $y \epsilon (-\infty; 4]$	✓ answer (1)
4.1.3	$(y - k)(x - m) = 4$ $(y - k) = \frac{4}{(x-m)}$ $y = \frac{4}{(x-m)} + k$ $m = 3$ $k = 4$	✓ $y = \frac{4}{(x-m)} + k$ ✓ $m = 3$ ✓ $k = 4$ (3)
4.1.4	$\therefore x = 0$	✓ answer (1)
4.1.5	$f'(x) = -2x + 6$ $f'(1) = 4$ $y - 0 = 4(x - 1)$ $\therefore y = 4x - 4$	✓ derivative ✓ gradient ✓ substitution ✓ answer (4)
4.1.6	$p < -5$	✓ ✓ answer (2)
4.1.7	$-x^2 + 6x - 5 = 0$ $x^2 - 6x + 5 = 0$ $(x - 1)(x - 5) = 0$ $x = 1$ or $x = 5$ $1 \leq x \leq 5$ $x \neq 3$	✓ critical values ✓ $1 \leq x \leq 5$ ✓ $x \neq 3$ (3)
4.1.8	$= 3^{-4+3}$ $= \frac{1}{3}$	✓✓ answer (2)

4.2		✓ shape ✓ A/S is negative ✓ turning point on x-axis ✓ negative y-intercept (4) **[22]**

QUESTION/VRAAG 5

5.1.	$y = 0$	✓ $y = 0$ (1)
5.2	$y = a^x$ $27 = a^{-3}$ at D$(-3: 27)$ $3^3 = a^{-3}$ $\left(\frac{1}{3}\right)^{-3} = a^{-3}$ $a = \frac{1}{3}$ or $27 = a^{-3}$ $3^3 = a^{-3}$ or $27 = \frac{1}{a^3}$ or $3^3 = (a^{-1})^3$ $\left(\frac{1}{3}\right)^{-3} = a^{-3}$ $a^3 = \frac{1}{27}$ $3 = a^{-1}$ $a = \frac{1}{3}$ $a = \sqrt[3]{\frac{1}{27}}$ $a = \frac{1}{3}$	✓ substitute D$(-3: 27)$ ✓ $a = \frac{1}{3}$ (2)
5.3	C$(0; 1)$	✓ C$(0; 1)$ (1)
5.4	$y = \left(\frac{1}{3}\right)^x$ $x = \left(\frac{1}{3}\right)^y$ $y = \log_{\frac{1}{3}} x$ OR $y = \left(\frac{1}{3}\right)^x$ $x = \log_{\frac{1}{3}} y$ $y = \log_{\frac{1}{3}} x$	✓ swop x and y ✓ log form (2) ✓ log form ✓ swop x and y (2)

	OR $y = -\log_3 x$ OR $y = \log_3 x^{-1}$	
5.5	$x > 0$	✓ answer (1)
5.6	$y < 3$ Or $(-\infty; 3)$	✓ ✓ answer (2)
5.7	$B\left(b; \frac{1}{9}\right)$ $y = \left(\frac{1}{3}\right)^x$ $\frac{1}{9} = \left(\frac{1}{3}\right)^b$ substitute $B\left(b; \frac{1}{9}\right)$ $\left(\frac{1}{3}\right)^2 = \left(\frac{1}{3}\right)^b$ $b = 2$ $AD = 2 + 3 = 5$ $AB = 27 - \frac{1}{9} = \frac{242}{9} = 26{,}89$ $\tan A\hat{D}B = \frac{26{,}89}{5}$ $A\hat{D}B = 79{,}47°$ **OR** $B\left(b; \frac{1}{9}\right)$ $y = \left(\frac{1}{3}\right)^x$ $\frac{1}{9} = \left(\frac{1}{3}\right)^b$ substitute $B\left(b; \frac{1}{9}\right)$ $\left(\frac{1}{3}\right)^2 = \left(\frac{1}{3}\right)^b$ $b = 2$ $AD = 2 + 3 = 5$ $DB = \sqrt{(2+3)^2 + \left(\frac{1}{9} - 27\right)^2}$ $DB = 27{,}35$ $\cos A\hat{D}B = \frac{5}{27{,}35}$ $A\hat{D}B = 79{,}47°$	✓ $\frac{1}{9} = 3^b$ substitution ✓ $b = 2$ ✓ $AB = 26{,}89$ ✓ correct trig ratio ✓ answer (5) ✓ $\frac{1}{9} = 3^b$ substitution ✓ $b = 2$ ✓ $DB = 27{,}35$ ✓ correct trig ratio ✓ answer (5)
		[14]

QUESTION/VRAAG 6

6.1	$A = 269\,000(1 - 0{,}11 \times 4)$ $A = R150\,640$	✓subst into correct formula ✓answer (2)
6.2	$A = P(1+i)^n$ $2x = x\left(1 + \frac{r}{1200}\right)^{72}$ $\left(1 + \frac{r}{1200}\right)^{72} = 2$ $1 + \frac{r}{1200} = \sqrt[72]{2}$ $\frac{r}{1200} = 0{,}0096735$ $\therefore r = 11{,}61\%$	✓ $n = 72$ ✓ substitution ✓ ✓ answer (4)
6.3.1	$A = P(1+i)^n$ $= R30\,000\left(1 + \frac{14{,}5}{400}\right)^6 \times \frac{97}{100}$ $= R36\,031{,}33$	✓ i and n ✓ subst into correct formula ✓ $\times 0{,}97$ ✓ answer (4)
6.3.2	$1 + \frac{r}{100} = \left(1 + \frac{0{,}145}{4}\right)^4$ $\frac{r}{100} = \left(1 + \frac{0{,}145}{4}\right)^4 - 1$ $= 0{,}1530766$ $r = 15{,}31\%$	✓ subst into correct formula ✓ answer (2)
6.4	$A = 25000\left(1 + \frac{0{,}063}{4}\right)^8\left(1 + \frac{0{,}069}{12}\right)^{24}$ $- 4000\left(1 + \frac{0{,}069}{12}\right)^{36}$ $= R35\,044{,}06$	✓ $\mathbf{25000}\left(\mathbf{1} + \frac{\mathbf{0{,}063}}{\mathbf{4}}\right)^{\mathbf{8}}$ ✓ $\left(\mathbf{1} + \frac{\mathbf{0{,}069}}{\mathbf{12}}\right)^{\mathbf{60}}$ ✓ $\mathbf{4000}\left(\mathbf{1} + \frac{\mathbf{0{,}069}}{\mathbf{12}}\right)^{\mathbf{36}}$ ✓ answer (4)
		[16]

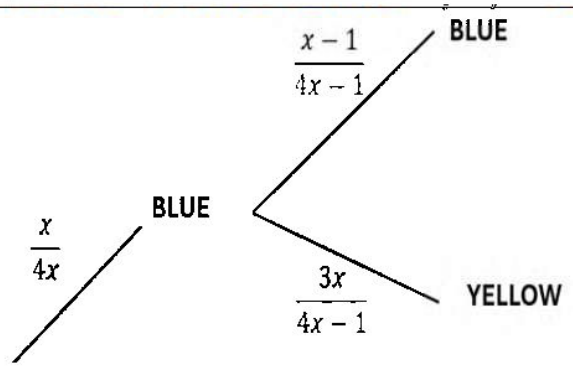
QUESTION/VRAAG 7

7.1	$f(x+h) = -2(x+h)^2 + 6$ $= -2x^2 - 4xh - 2h^2 + 6$ $f(x+h) - f(x) = -2x^2 - 4xh - 2h^2 + 6 - 2x^2 - 6$ $= -4xh - 2h^2$ $f'(x) = \lim_{h\to 0} \frac{-4xh - 2h^2}{h}$ $= \lim_{h\to 0} \frac{h(-4x-2h)}{h}$ $= \lim_{h\to 0}(-4x - 2h)$ $= -4x$ **OR** $f'(x) = \lim_{h\to 0} \frac{-2x^2 - 4xh - 2h^2 + 6 - (-2x^2 + 6)}{h}$ $f'(x) = \lim_{h\to 0} \frac{-4xh - 2h^2}{h}$ $= \lim_{h\to 0} \frac{h(-4x-2h)}{h}$ $= \lim_{h\to 0}(-4x - 2h)$ $= -4x$	✓ $f(x+h)$ ✓ simplify ✓ substitution ✓ factor of h ✓answer ✓ $f(x+h)$ ✓ substitution ✓ simplify ✓ factor of h ✓answer (5)
7.2.1	$= D_x[x^3 + 3x^2 - 6x + 5]$ $= 3x^2 + 6x - 6$	✓ $3x^2$ ✓$6x$ ✓-6 (3)
7.2.2	$m'(x)$ if $m(x) = \frac{1}{x} + \frac{3x}{4}$ $m(x) = x^{-1} + \frac{3x}{4}$ $m'(x) = -x^{-2} + \frac{3}{4}$	✓x^{-1} ✓$-x^{-2}$ ✓ $\frac{3}{4}$ (3)
7.2.3	$f(x) = \frac{x^3 - 27}{x^2 - 3x}$ $f(x) = \frac{(x-3)(x^2+3x+9)}{x(x-3)}$ $f(x) = \frac{x^2+3x+9}{x}$ $f(x) = x + 3 + 9x^{-1}$ $f'(x) = 1 - 9x^{-2}$	✓ factorising ✓ simplify ✓✓ answer (4)

7.2.4	$x = \frac{2y^2}{\sqrt[3]{y}} + \frac{3}{\sqrt[3]{y}}$ $= \frac{2y^2}{y^{\frac{1}{3}}} + \frac{3}{y^{\frac{1}{3}}}$ $= 2y^{\frac{5}{3}} + 3y^{-\frac{1}{3}}$ $\frac{dx}{dy} = \frac{10}{3}y^{\frac{2}{3}} - y^{-\frac{4}{3}}$	✓ x subject of formula ✓✓ simplify ✓✓ answer (5)
7.3	$g(x) = bx^2, x > 0$ $g'(x) = 2bx$ $g'(3) = 6b$ $g^{-1}: x = by^2, y > 0$ $y = \sqrt{\frac{x}{b}}$ $g^{-1}\left(\frac{9}{2}\right) = \sqrt{\frac{9}{2b}}$ $6b = \sqrt{\frac{9}{2b}}$ $36b^2 = \frac{9}{2b}$ $36b^3 = \frac{9}{2}$ $b^3 = \frac{1}{8}$ $b = \frac{1}{2}$	✓$g^1(3) = 6b$ ✓ inverse of g ✓ $g^{-1}\left(\frac{9}{2}\right) = \sqrt{\frac{9}{2b}}$ ✓ equating $g' = g^{-1}$ ✓ answer (5)
		[25]

QUESTION/VRAAG 8

8.1	$P(A \text{ or } B) = P(A) + P(B)$ $0.75 = 0{,}35 + P(B)$ $\therefore P(B) = 0{,}40$	✓ P(A and B) = 0 ✓ substitution ✓ answer (3)
8.2.1	$x + 10 + 6 + 5 = 29$ $x = 8$ $30 + 10 + 8 + 6 + 5 + 41 + 25 + y = 130$ $125 + y = 130$ $y = 5$	✓ method for x ✓ value of x ✓ method for y ✓ value of y (4)
8.2.2	$P(\text{no grapes or no fruit}) = \frac{41 + 10 + 30}{130} + \frac{5}{130}$ $= \frac{86}{130}$ or $\frac{43}{65}$	✓ $41 + 10 + 30$ ✓ adding 5 ✓ answer (3)
8.3	$P(D \text{ or } C) = P(D) + P(C) - P(D).P(C)$ $0{,}84 = x + x - x.x$ $x^2 - 2x + 0{,}84 = 0$ $x = \frac{-(-2) \pm \sqrt{(-2)^2 - 4(1)(0{,}84)}}{2(1)}$ $x = 1{,}4 \text{ or } 0{,}6$ $\therefore x = 0{,}6$	✓ independence/ $P(D).P(C)$ $P(D \text{ and } C) = P(D).P(C)$ ✓ substitution ✓ standard form ✓ answers ✓ selection (5)

8.4	 $P(B \text{ and } Y) = P(B) \times P(Y)$ $\frac{1}{5} = \frac{x}{4x} \times \frac{3x}{4x-1}$ $\frac{1}{5} = \frac{3x^2}{16x^2-4x}$ $16x^2 - 4x = 15x^2$ $x^2 - 4x = 0$ $x(x-4) = 0$ $x = 4$ Number of balls = 16 **OR** $\frac{1}{5} = \frac{x}{4x} \times \frac{3x}{4x-1}$ $\frac{1}{5} = \frac{3x}{16x-4}$ $16x - 4 = 15x$ $x = 4$ Number of balls = 16	✓ $\frac{x}{4x}$ ✓ $\frac{3x}{4x-1}$ ✓ equating product to $\frac{1}{5}$ or 0,2 ✓ x value ✓ answer ✓ $\frac{x}{4x}$ ✓ $\frac{3x}{4x-1}$ ✓ equating product to $\frac{1}{5}$ or 0,2 ✓ x value ✓ answer (5)
		[20]
		150