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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



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**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

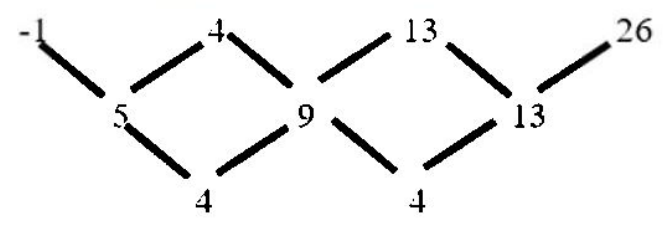
1.1.1	$x(3x - 2) = 0$ $x = 0$ or $x = \frac{2}{3}$	✓ factors/formula ✓✓ both answers (3)
1.1.2	$x^2 - 7x + 3 = 0$ $x = \frac{-(-7) \pm \sqrt{(-7)^2 - 4(1)(3)}}{2(1)}$ $x = 6,54$ or $x = 0,46$	✓ standard form ✓ substitution into correct formula ✓✓ answers (4)
1.1.3	$x^2 - 5x + 4 - 10 \geq 0$ $x^2 - 5x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



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

QUESTION/VRAAG 2

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





2.1.3	$2n^2 - n - 2 = 2413$ $2n^2 - n - 2415 = 0$ $(n - 35)(2n + 69) = 0$ $n = 35 \quad \text{or} \quad n \neq -\frac{69}{2}$	$\checkmark T_n = 2413$ $\checkmark$ standard form $\checkmark$ answer with selection (3)
2.2	For AP: $T_2 - T_1 = T_3 - T_2$ $a - 6 = b - a$ $2a - 6 = b \dots \dots \dots (1)$ For GP: $\frac{T_2}{T_1} = \frac{T_3}{T_2}$ $\frac{b}{a} = \frac{16}{b}$ $b^2 = 16a \dots \dots \dots (2)$ $(2a - 6)^2 = 16a$ $4a^2 - 24a + 36 - 16a = 0$ $4a^2 - 40a + 36 = 0$ $a^2 - 10a + 9 = 0$ $(a - 1)(a - 9) = 0$ $a = 1 \quad \text{or} \quad a = 9$ $b = 2(9) - 6 = 12$ Or $b = 2(1) - 6 = -4$	$\checkmark$ equation 1 $\checkmark$ equation 2 $\checkmark$ standard form $\checkmark$ both a values $\checkmark$ 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: $p = \pm \sqrt{\left(-\frac{1}{9}\right)(-1)}$ $= \pm \frac{1}{3}$	$\checkmark$ ratio $\checkmark \checkmark$ answer (3) $\checkmark = \pm \sqrt{\left(-\frac{1}{9}\right)(-1)}$ $\checkmark \checkmark$ answer (3)
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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	$r = 3$ $a = 1$ $T_n = 3^{n-1}$ 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]

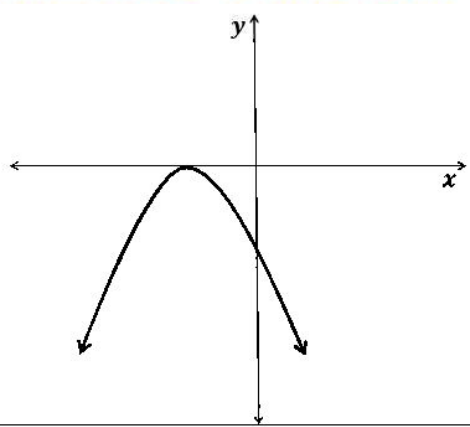




QUESTION/VRAAG 4

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 $y \in (-\infty; 4]$	✓ 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]
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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)





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	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	$B(b; \frac{1}{9})$ $y = (\frac{1}{3})^x$ $\frac{1}{9} = (\frac{1}{3})^b$ substitute $B(b; \frac{1}{9})$ $(\frac{1}{3})^2 = (\frac{1}{3})^b$ $b = 2$ $AD = 2 + 3 = 5$ $AB = 27 - \frac{1}{9} = \frac{242}{9} = 26,89$ $\tan \widehat{ADB} = \frac{26,89}{5}$ $\widehat{ADB} = 79,47^\circ$ OR $B(b; \frac{1}{9})$ $y = (\frac{1}{3})^x$ $\frac{1}{9} = (\frac{1}{3})^b$ substitute $B(b; \frac{1}{9})$ $(\frac{1}{3})^2 = (\frac{1}{3})^b$ $b = 2$ $AD = 2 + 3 = 5$ $DB = \sqrt{(2+3)^2 + (\frac{1}{9} - 27)^2}$ $DB = 27,35$ $\cos \widehat{ADB} = \frac{5}{27,35}$ $\widehat{ADB} = 79,47^\circ$	$\checkmark \frac{1}{9} = 3^b$ substitution $\checkmark b = 2$ $\checkmark AB = 26,89$ $\checkmark$ correct trig ratio $\checkmark$ answer (5) $\checkmark \frac{1}{9} = 3^b$ substitution $\checkmark b = 2$ $\checkmark DB = 27,35$ $\checkmark$ correct trig ratio $\checkmark$ answer (5)





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	$A = 25000 \left(1 + \frac{0,063}{4}\right)^8 \left(1 + \frac{0,069}{12}\right)^{24}$ $- 4000 \left(1 + \frac{0,069}{12}\right)^{36}$ $= R35\,044,06$	✓ $25000 \left(1 + \frac{0,063}{4}\right)^8$ ✓ $\left(1 + \frac{0,069}{12}\right)^{60}$ ✓ $4000 \left(1 + \frac{0,069}{12}\right)^{36}$ ✓ answer (4)
		[16]





QUESTION/VRAAG 7

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





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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]



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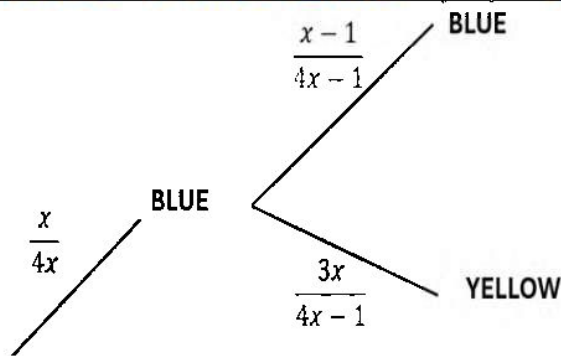


QUESTION/VRAAG 8

8.1	$P(A \text{ or } B) = P(A) + P(B)$ $0.75 = 0.35 + P(B)$ $\therefore P(B) = 0.40$	✓ $P(A \text{ and } B) = 0$ ✓ 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	$P(\text{no grapes or no fruit}) = \frac{41 + 10 + 30}{130} + \frac{5}{130}$ $= \frac{86}{130} \quad \text{or} \quad \frac{43}{65}$	✓ $41 + 10 + 30$ ✓ 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

$$\checkmark \frac{x}{4x} \quad \checkmark \frac{3x}{4x-1}$$

 $\checkmark$ equating product to $\frac{1}{5}$ or 0,2

 $\checkmark$ x value

 $\checkmark$ answer

$$\checkmark \frac{x}{4x} \quad \checkmark \frac{3x}{4x-1}$$

 $\checkmark$ equating product to $\frac{1}{5}$ or 0,2

 $\checkmark$ x value

 $\checkmark$ answer

(5)

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