



HOËRSKOOL JOHAN JURGENS
MATHEMATICS
MARKING GUIDELINE

GRADE 10: EXAM PAPER 1

NOV 2025 TERM 4

NOTE:

- If a candidate answers a question TWICE, mark the FIRST attempt ONLY.
- Consistent accuracy applies in ALL aspects of the marking guideline.
- If a candidate crossed out an attempt of a question and did NOT redo the question, mark the cross-out attempt.
- The mark for substitution is awarded for substitution into the CORRECT formula.

QUESTION 1 [15]

1.1.1	$= x^3 - x^2 - 2x - 2x^2 + 2x + 4 \checkmark$ $= x^3 - 3x^2 + 4 \checkmark$	\checkmark simplification \checkmark answer	(2)
1.1.2	$= \frac{5(x-3y)\checkmark}{(3x-4)} \times \frac{2(3x-4)\checkmark}{5}$ $= 2(x-3y)$ $= 2x - 6y \checkmark$	$\checkmark 5(x-3y)$ $\checkmark 2(3x-4)$ $\checkmark 2x - 6y$	(3)
1.2.1	$= 4(3a^2 - 2a + 1) \checkmark$ $= 4(3a + 1)(a - 1) \checkmark$	$\checkmark 4(3a^2 - 2a + 1)$ $\checkmark (3a + 1)(a - 1)$	(2)
1.2.2	$= 3p(2x - 1) + (2x - 1) \checkmark$ $= (2x - 1)(3p + 1) \checkmark$	$\checkmark +(2x - 1)$ $\checkmark (2x - 1)(3p + 1)$	(2)
1.2.3	$= 4x + 4xy - 8y - 8y^2$ $= 4(x + xy - 2y - 2y^2) \checkmark$ $= 4[x(1 + y) - 2y(1 + y)] \checkmark$ $= 4[(1 + y)(x - 2y)] \checkmark$	$\checkmark 4(x + xy - 2y - 2y^2)$ $\checkmark x(1 + y) - 2y(1 + y)$ $\checkmark (1 + y)(x - 2y)$	(3)

1.2.4	$= \left(k + \frac{1}{k}\right) - \left(k + \frac{1}{k}\right) \left(k - \frac{1}{k}\right) \checkmark$ $= \left(k + \frac{1}{k}\right) \left[1 - \left(k - \frac{1}{k}\right)\right] \checkmark$ $= \left(\frac{k^2 + 1}{k}\right) \left(1 - k + \frac{1}{k}\right)$ $= \left(\frac{k^2 + 1}{k}\right) \left(\frac{k - k^2 + 1}{k}\right) \checkmark$	$\checkmark \left(k + \frac{1}{k}\right) \left(k - \frac{1}{k}\right)$ $\checkmark \left(k + \frac{1}{k}\right) \left[1 - \left(k - \frac{1}{k}\right)\right]$ $\checkmark \left(\frac{k^2 + 1}{k}\right) \left(\frac{k - k^2 + 1}{k}\right)$	(3)
			[15]

QUESTION 2 [9]

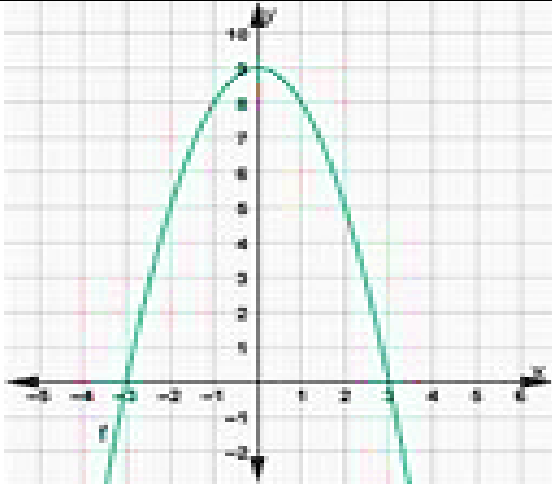
2.1.1	$(x - 6)(x - 1) = 0 \checkmark$ $\therefore x = 6 \text{ or } x = 1 \checkmark$	\checkmark factors \checkmark solutions	(2)
2.1.2	$4 - 2x = 3 + x \checkmark$ $-3x = -1$ $\therefore x = \frac{1}{3} \checkmark$	\checkmark simplification \checkmark solution	(2)
2.1.3	$-2 \leq x \leq 4 \checkmark \checkmark$	$\checkmark \checkmark -2 \leq x \leq 4$	(2)
2.2	$y = 2x \checkmark \quad \dots(1)$ $y = 4x + 2 \quad \dots(2)$ Sub (1) in (2): $2x = 4x + 2$ $-2x = 2$ $\therefore x = -1 \checkmark$ $\therefore y = -2 \checkmark$	$\checkmark y = 2x$ $\checkmark x = -1$ $\checkmark y = -2$	(3)
			[9]

QUESTION 3 [12]

3.1.1	$= -25 - 1 + 25 \checkmark$ $= -1 \checkmark$	\checkmark simplification \checkmark answer	(2)
3.1.2	$= \frac{2^{2x} - 3 \cdot 2^{2x}}{2^{2x}} \checkmark$ $= \frac{2^{2x}(1 - 3)}{2^{2x}} \checkmark$ $= -2 \checkmark$	\checkmark expansion \checkmark factors \checkmark answer	(3)
3.2.1	$5^{x+2} = 5^3 \checkmark$ $x + 2 = 3$ $\therefore x = 1 \checkmark$	\checkmark simplification \checkmark solution	(2)
3.2.2	$x^3 = 8 \checkmark$ $\therefore x = 2 \checkmark$	\checkmark simplification \checkmark solution	(2)
3.3	$3^{x-y} = 3^{-3} \checkmark$ $x - y = -3 \checkmark$ $y = x + 3 \checkmark$	$\checkmark 3^{-3}$ $\checkmark x - y = -3$ $\checkmark y = x + 3$	(3)
			[12]

QUESTION 4 [13]

4.1	9 cubes \checkmark	\checkmark cubes	(1)
4.2	Linear \checkmark ; the pattern has a common first difference \checkmark .	\checkmark linear \checkmark reason	(2)
4.3	$T_n = 2n \checkmark - 1 \checkmark$	$\checkmark \checkmark T_n = 2n - 1$	(2)
4.4	$T_{19} = 2(19) \checkmark - 1$ $= 37 \checkmark$	\checkmark substitution \checkmark answer	(2)
4.5	$2n - 1 = 87 \checkmark$ $2n = 88$ $\therefore n = 44 \checkmark$	\checkmark substitution \checkmark answer	(2)
4.6	$2n - 1 > 123 \checkmark$ $2n > 124 \checkmark$ $\therefore n > 62 \checkmark \checkmark$	$\checkmark 2n - 1 > 123$ \checkmark simplification $\checkmark \checkmark n > 62$	(4)

			[13]
QUESTION 5 [13]			
5.1	$(0\checkmark; 9\checkmark)$	$\checkmark\checkmark (0; 9)$	(2)
5.2	$x^2 - 9 = 0 \checkmark$ $x = -3 \checkmark$ or $x = 3 \checkmark$	\checkmark equation $\checkmark x = -3$ $\checkmark x = 3$	(3)
5.3		\checkmark x-intercepts \checkmark y-intercept \checkmark shape & turning point	(3)
5.4	$y \in R; y \leq 9 \checkmark$	$\checkmark y \leq 9$	(1)
5.5.1	$x < -3 \checkmark$ or $x > 3 \checkmark$	$\checkmark x < -3$ $\checkmark x > 3$	(2)
5.5.2	$g(x) = -f(x) = -(9 - x^2) \checkmark$ $= x^2 - 9 \checkmark$	\checkmark method \checkmark equation	(2)
			[13]

QUESTION 6 [14]

6.1	$x \in R \checkmark; x \neq 0 \checkmark$	$\checkmark x \in R$ $\checkmark x \neq 0$	(2)
6.2	$\frac{1}{x} - 2 = 0 \checkmark$ $\frac{1}{x} = 2$ $x = \frac{1}{2} \checkmark$ $A\left(\frac{1}{2}; 0\right) \checkmark$	$\checkmark \frac{1}{x} - 2 = 0$ \checkmark simplification $\checkmark A\left(\frac{1}{2}; 0\right)$	(3)

6.3	$y = -2$ ✓	✓ $y = -2$	(1)
6.4	$g(x) = x - 2$ ✓ $\frac{1}{x} - 2 = x - 2$ ✓ $\frac{1}{x} = x$ $x^2 = 1$ ✓ $\therefore x = 1$ $\therefore y = -3$ $B(-1; -3)$ ✓	✓ $g(x) = x - 2$ ✓ $\frac{1}{x} - 2 = x - 2$ ✓ $x^2 = 1$ ✓ $B(-1; -3)$	(4)
6.5	$\frac{1}{x} - 2 = -4$ ✓ $\frac{1}{x} = -2$ ✓ $x = -\frac{1}{2}$ ✓ ✓	✓ $\frac{1}{x} - 2 = -4$ ✓ $\frac{1}{x} = -2$ ✓ ✓ $x = -\frac{1}{2}$	(4)
			[14]

QUESTION 7 [12]

7.1	Linear ✓	✓ linear	(1)
7.2	R18 000 ✓	✓ value	(1)
7.3	R3 000 ✓ ✓	✓ ✓ R3 000	(2)
7.4	$A = 15000(1 + 0,2 \times 1)$ ✓ $= R18000$ Interest = R18 000 – R15 000 ✓ $= R3 000$ ✓	✓ formula ✓ method ✓ interest	(3)
7.5	$A = 15000(1 + 0,2 \times 18)$ ✓ $= R69 000,00$ ✓	✓ substitution ✓ value	(2)
7.6	$8(15000) = 15000(1 + 0,2 \times n)$ ✓ $8 = 1 + 0,2n$ $0,2n = 7$ ✓ $n = 35$ ✓	✓ substitution ✓ simplification ✓ $n = 35$	(3)
			[12]

QUESTION 8 [12]

8.1	66,67%✓	✓ percentage	(1)
8.2	0,33✓	✓ decimal	(1)
8.3	$P(\text{not } A) = 1 - \frac{2}{3} \checkmark = \frac{1}{3} \checkmark$	✓ subtraction ✓ fraction	(2)
8.4	$P(\text{not } B) = 1 - \frac{1}{3} \checkmark = \frac{2}{3} \checkmark$	✓ subtraction ✓ fraction	(2)
8.5.1	$P(A \text{ and } B) = \frac{2}{3} + \frac{1}{3} \checkmark = 1 \checkmark$ Hence, A and B is complementary. ✓	✓ formula ✓ calculation ✓ conclusion	(3)
8.5.2	$P(A \text{ and } B) \neq 0 \checkmark$ Hence, A and B are NOT mutually exclusive. ✓✓	✓ method ✓ ✓ conclusion	(3)
			[12]

TOTAL: 100

TAXONOMY LEVELS					
GRADE 10					
MATHEMATICS					
PAPER 1 - TERM 4 - 2025					
MARKS: 100					
QUESTION	KNOWLEDGE	ROUTINE PROCEDURES	COMPLEX PROCEDURES	PROBLEM SOLVING	TOTAL
DESIRED %	20%	35%	30%	15%	100%
1.1.1	2				2
1.1.2		3			3
1.2.1	2				2
1.2.2		2			2
1.2.3			3		3
1.2.4				3	3
2.1.1		2			2
2.1.2		2			2
2.1.3		2			2
2.2			3		3
3.1.1	2				2
3.1.2			3		3
3.2.1		2			2
3.2.2		2			2
3.3				3	3
4.1	1				1
4.2	2				2
4.3		2			2
4.4	2				2
4.5		2			2
4.6				4	4
5.1	2				2
5.2	3				3
5.3		3			3
5.4		1			1
5.5.1			2		2
5.5.2			2		2
6.1	2				2
6.2		3			3
6.3	1				1
6.4		4			4
6.5			4		4
7.1	1				1
7.2	1				1
7.3	2				2
7.4		3			3
7.5		2			2
7.6			3		3

8.1	1				1
8.2	1				1
8.3		2			2
8.4		2			2
8.5.1			3		3
8.5.2			3		3
Total	25	39	26	10	100
Actual %	25,0	39,0	26,0	10,0	100,0
Desired %	20%	35%	30%	15%	100