

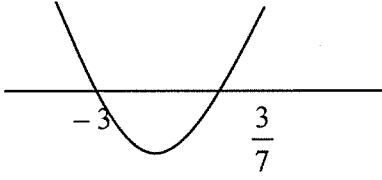
Province of the
EASTERN CAPE
EDUCATION

**NATIONAL
SENIOR CERTIFICATE**

GRADE 12

MATHEMATICS P1
MARKING GUIDELINE

QUESTION 1

1.1.1	$x^2 - x = 12$ $x^2 - x - 12 = 0$ $(x - 4)(x + 3) = 0$ $x = 4$ or $x = -3$ OR $x(x - 1) = 12$ $4(3) = 12$ $(-3)(-4) = 12$ By inspection $x = 4$ or $x = -3$	✓ standard form ✓ factors ✓ answers (3) ✓ factors ✓✓ answers (3)
1.1.2	$2x^2 + 3x - 7 = 0$ $x = \frac{-3 \pm \sqrt{(3)^2 - 4(2)(-7)}}{2(2)}$ $= \frac{-3 \pm \sqrt{65}}{4}$ $x = 1,27$ or $x = -2,77$	✓ substitution into correct formula ✓ 65 ✓✓ answers (4)
1.1.3	$7x^2 + 18x - 9 > 0$ $(7x - 3)(x + 3) > 0$ $\begin{array}{ccccccc} + & 0 & - & 0 & + \\ & -3 & & \frac{3}{7} & \end{array}$  $x < -3$ or $x > \frac{3}{7}$ OR $x \in (-\infty; -3) \cup \left(\frac{3}{7}; \infty\right)$	✓ factors ✓ $\frac{3}{7}$ and -3 ✓ correct intervals (4)
1.2	$2x - y = 7$ $y = 2x - 7$ Substitute $y = 2x - 7$ into $x^2 + xy = 21 - y^2$ $x^2 + x(2x - 7) = 21 - (2x - 7)^2$ $x^2 + 2x^2 - 7x = 21 - 4x^2 + 28x - 49$ $7x^2 - 35x + 28 = 0$ $x^2 - 5x + 4 = 0$ $(x - 4)(x - 1) = 0$ $x = 4$ or $x = 1$ $y = 1$ or $y = -5$	✓ $y = 2x - 7$ ✓ substitution ✓ multiplication ✓ standard form ✓ factors ✓ x-answers ✓ y-answers (7)

QUESTION 2

2.1	39	✓ answer (1)
2.2	$\begin{array}{ccccccc} & 3 & & 9 & & 17 & & 27 \\ & \diagdown & & \diagup & & \diagdown & & \diagup \\ & 6 & & & & 8 & & 10 \\ & & \diagdown & & \diagup & & \diagdown & & \diagup \\ & & 2 & & & & 2 & & \end{array}$ Let $T_n = an^2 + bn + c$ Then $2a = 2$ $a = 1$ $3a + b = 6$ $3(1) + b = 6$ $b = 3$ $a + b + c = 3$ $1 + 3 + c = 3$ $c = -1$ $T_n = n^2 + 3n - 1$ OR $2a = 2$ $a = 1$ $c = 3 - 4 = -1$ $T_n = n^2 + bn - 1$ $3 = (1)^2 + b(1) - 1$ (using $T_1 = 3$) $b = 3$ $T_n = n^2 + 3n - 1$	✓ formula ✓ $a = 1$ ✓ $b = 3$ ✓ $c = -1$ (4)
2.3	$n^2 + 3n - 1 > 269$ $n^2 + 3n - 270 > 0$ $(n + 18)(n - 15) > 0$ The first value of n is 16 The term is $16^2 + 3(16) - 1 = 303$	✓ $n^2 + 3n - 1 > 269$ ✓ standard form ✓ factors ✓ $n = 16$ ✓ answer (5)

QUESTION 3

3.1	$S_{\infty} = 8 + \frac{8}{\sqrt{2}} + \dots$ $r = \frac{1}{\sqrt{2}} \quad \text{and}$ $s_{\infty} = \frac{a}{1-r}$ $= \frac{8}{1 - \frac{1}{\sqrt{2}}}$ $= \frac{8\sqrt{2}}{\sqrt{2}-1}$ $= \frac{8\sqrt{2}(\sqrt{2}+1)}{(\sqrt{2}-1)(\sqrt{2}+1)}$ $= 8\sqrt{2}\sqrt{2} + 8\sqrt{2}$ $= 16 + 8\sqrt{2}$ OR $S_{\infty} = 8 + \frac{8}{\sqrt{2}} + \dots$ $r = \frac{1}{\sqrt{2}} \quad \text{and}$ $s_{\infty} = \frac{a}{1-r}$ $= \frac{8}{1 - \frac{1}{\sqrt{2}}}$ $= \frac{8\left(1 + \frac{1}{\sqrt{2}}\right)}{\left(1 - \frac{1}{\sqrt{2}}\right)\left(1 + \frac{1}{\sqrt{2}}\right)}$ $= \frac{8\left(1 + \frac{1}{\sqrt{2}}\right)}{\frac{1}{2}}$ $= 16\left(1 + \frac{1}{\sqrt{2}}\right)$ $= 16 + \frac{16\sqrt{2}}{2}$ $= 16 + 8\sqrt{2}$	$\checkmark r = \frac{1}{\sqrt{2}}$ $\checkmark \text{ substitution}$ $\checkmark \text{ rationalisation}$ $\checkmark \text{ simplification} \quad (4)$ $\checkmark r = \frac{1}{\sqrt{2}}$ $\checkmark \text{ substitution}$ $\checkmark \text{ rationalisation}$ $\checkmark \text{ simplification} \quad (4)$
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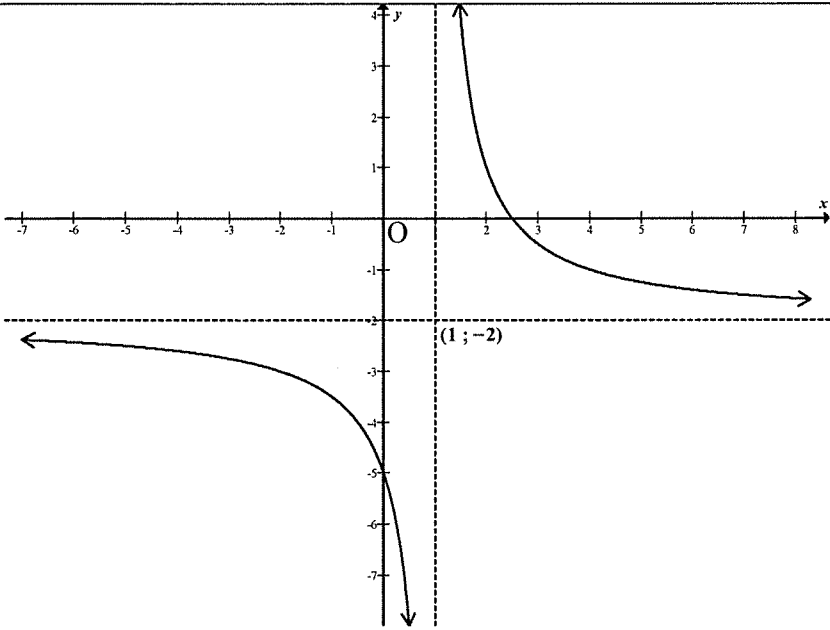
3.2.1	$5 + 15 + 45 + \dots + T_{20}$ $= \sum_{n=1}^{20} 5(3)^{n-1}$ OR $5 + 15 + 45 + \dots + T_{20}$ $= 5 \sum_{n=0}^{19} (3)^n$ OR $5 + 15 + 45 + \dots + T_{20}$ $= 5 \sum_{i=l}^{l+19} (3)^{i-l} \quad \text{for any } l \in \mathbb{Z}$	✓ ✓ answer (2) ✓ ✓ answer (2) ✓ ✓ answer (2)
3.2.2	$5 + 15 + 45 + \dots + T_{20}$ $= \frac{5(3^{20} - 1)}{3 - 1}$ $= 8\,716\,961\,000$	✓ formula ✓ substitution ✓ answer (3) [9]

QUESTION 4

4.1.1	$S_{23} = \frac{23}{2}(5(23) + 9)$ $= 1426$	✓ substitution ✓ answer (2)
4.1.2	$T_{23} = S_{23} - S_{22}$ $= 1426 - \frac{22}{2}(5(22) + 9)$ $= 1426 - 1309$ $= 117$	✓ statement ✓ $S_{22} = 1309$ ✓ answer (3)
4.2	Arithmetic Sequence: $12 ; 12 + d ; 12 + 2d$ Geometric Sequence: $12 ; 12r ; 12r^2$ $12 + d = 12r$ $d = 12r - 12$ $12 + 12r + 12r^2 = 12 + 12 + d + 12 + 2d + 3$ $12r^2 = 12 + 2(12r - 12) + 3$ $12r^2 = 12 + 24r - 24 + 3$ $12r^2 - 24r + 9 = 0$ $4r^2 - 8r + 3 = 0$ $(2r - 3)(2r - 1) = 0$ $r = \frac{3}{2} \quad \text{or} \quad r = \frac{1}{2}$	✓ equation ✓ equation ✓ standard form ✓ factors ✓ answers (6)

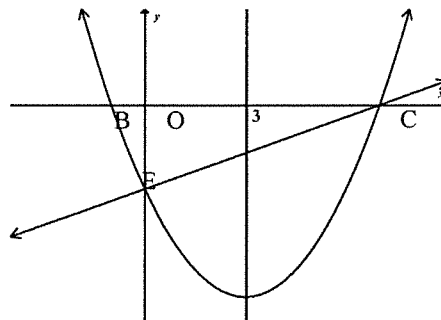
	OR The 3rd term of GP = 3 + 3rd term of AP $12r^2 = 3 + 12 + 2d$ $12r^2 = 15 + 24r - 24$ $12r^2 - 24r + 9 = 0$ $4r^2 - 8r + 3 = 0$ $(2r - 3)(2r - 1) = 0$ $r = \frac{3}{2} \quad \text{or} \quad r = \frac{1}{2}$	✓ equation ✓ equation ✓ standard form ✓ factors ✓ answers [11]
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QUESTION 5

5.1	$x = 1$ $y = -2$	✓✓ answers (2)
5.2	y-intercept: $y = \frac{3}{0-1} - 2 = -5$ x-intercept: $\left(\frac{5}{2}; 0\right)$ $0 = \frac{3}{x-1} - 2$ $2 = \frac{3}{x-1}$ $2x - 2 = 3$ $2x = 5$ $x = \frac{5}{2}$	✓ $y = -5$ ✓ substitute $y = 0$ ✓ answer (3)
5.3		✓ asymptotes ✓ y-intercept ✓ shape (3)

5.4	$-f(x) = \frac{-3}{x-1} + 2$ $y \in \mathbb{R} - \{2\} \quad \text{OR} \quad y \in (-\infty; 2) \cup (2; \infty) \quad \text{OR} \quad y \in \mathbb{R}; y \neq 2$	✓ answer (1)
5.5	$g(x) = \frac{-3}{x+1} - 2$ $= \frac{3}{-x-1} - 2$ Reflection of f about the y -axis. OR (i) horizontal shift 2 units to the left followed by (ii) reflection in x -axis, followed by (iii) vertical downward shift of 4 units	✓ manipulation ✓ answer (2) [11]

QUESTION 6



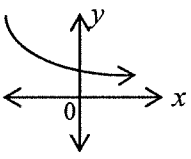
6.1	$\frac{x}{2} - \frac{7}{2} = 0$ $x = 7$ $C(7; 0)$ OR $y = \frac{7}{2} - \frac{7}{2}$ $y = 0$ $C(7; 0)$	$\frac{x}{2} - \frac{7}{2} = 0$ (1) ✓ substitution ✓ answer (2)
6.2	x - coordinate of B is $3 - 4 = -1$	✓ answer (1)

6.3	OPTION 1 $f(x) = a(x-3)^2 + q$ At B and C: $0 = 16a + q$ At E: $-\frac{7}{2} = 9a + q$ Solving simultaneously gives $a = \frac{1}{2} \text{ and } q = -8$ OPTION 2 $f(x) = a(x+1)(x-7)$ $y = a(x+1)(x-7)$ $-3,5 = a(0+1)(0-7)$ $-3,5 = -7a$ $a = \frac{1}{2}$ $f(x) = \frac{1}{2}(x+1)(x-7)$ $= \frac{1}{2}(x^2 - 6x - 7)$ $= \frac{1}{2}[(x-3)^2 - 16]$ $= \frac{1}{2}(x-3)^2 - 8$ OPTION 3 $a = \frac{1}{2}$ Axis of symmetry: $x = 3$ or $x = \frac{-1+7}{2} = 3$ $f(x) = \frac{1}{2}(x-3)^2 + q$ $0 = \frac{1}{2}(7-3)^2 + q$ $q = -8$ $y = \frac{1}{2}(x-3)^2 - 8$	✓ substitution ✓ substitution ✓ substitution ✓✓ $a = \frac{1}{2}$ ✓ $q = -8$ (6) ✓ substitution ✓ substitution ✓ $a = \frac{1}{2}$ ✓ substitution ✓ simplification ✓ answer (6) ✓✓✓ $a = \frac{1}{2}$ ✓ substitution ✓ substitution ✓ answer (6)
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	OPTION 4 $a = \frac{1}{2}$ Axis of symmetry: $x = 3$ $f(x) = \frac{1}{2}(x-3)^2 + q$ $q = f(3)$ $q = \frac{1}{2}(3+1)(3-7)$ $q = -8$ $y = \frac{1}{2}(x-3)^2 - 8$	✓✓✓ $a = \frac{1}{2}$ ✓ substitution ✓ substitution ✓ answer (6)
6.4	$h(x) = -f(x) = \frac{-1}{2}(x-3)^2 + 8$	✓ answer (1)
6.5	$1 - f(x) = -\frac{1}{2}(x-3)^2 + 9$ ∴ Maximum value is 9. OR Maximum value = $1 - (-8)$ = 9 OR $t(x) = -\frac{1}{2}x^2 + 3x + \frac{9}{2}$ $t'(x) = -x + 3 = 0$ $\text{Max } V_{at\ x=3} = -\frac{1}{2}(3)^2 + 3(3) + \frac{9}{2} = 9$	✓ method ✓ answer (2)
6.6	$f(x^2 - 2) = 0$ $f(x) = 0 \text{ if } x = -1 \text{ or } x = 7$ $\therefore f(x^2 - 2) = 0 \text{ if } x^2 - 2 = -1 \text{ or } x^2 - 2 = 7$ $\therefore x^2 = 1 \quad \text{or} \quad x^2 = 9$ $\therefore x = 1 \text{ or } x = -1 \quad \text{or} \quad x = 3 \text{ or } x = -3$	✓ substitution ✓ simplification ✓ answer ✓ answer (4)

	$\frac{1}{2}(x^2 - 2 - 3)^2 - 8 = 0$ $\frac{1}{2}(x^2 - 5)^2 = 8$ $(x^2 - 5)^2 = 16$ $x^2 - 5 = 4 \quad \text{or} \quad x^2 - 5 = -4$ $x^2 = 9 \quad \text{or} \quad x^2 = 1$ $x = 3 \text{ or } x = -3 \text{ or } x = 1 \text{ or } x = -1$ OR $f(x^2 - 2) = 0$ $\frac{1}{2}(x^2 - 2 - 3)^2 - 8 = 0$ $\frac{1}{2}(x^2 - 5)^2 = 8$ $(x^2 - 5)^2 - 16 = 0$ $(x^2 - 5 - 4)(x^2 - 5 + 4) = 0$ $(x^2 - 9)(x^2 - 1) = 0$ $(x - 3)(x + 3)(x - 1)(x + 1) = 0$ $x = 3 \text{ or } x = -3 \text{ or } x = 1 \text{ or } x = -1$	✓ substitution ✓ simplification ✓ factors ✓ answer (4)
	$f(x^2 - 2) = 0$ $\frac{1}{2}(x^2 - 2 - 3)^2 - 8 = 0$ $\frac{1}{2}(x^2 - 5)^2 = 8$ $(x^2 - 5)^2 - 16 = 0$ $(x^2 - 5 - 4)(x^2 - 5 + 4) = 0$ $(x^2 - 9)(x^2 - 1) = 0$ $(x - 3)(x + 3)(x - 1)(x + 1) = 0$ $x = 3 \text{ or } x = -3 \text{ or } x = 1 \text{ or } x = -1$	✓ substitution ✓ simplification ✓ factors ✓ answer (4) [15]

QUESTION 7

7.1	Decreasing function Since $0 < a < 1$ OR As x increases, $f(x)$ decreases	✓ decreasing ✓ $a < 1$ (2)
7.2	$f^{-1}: x = \left(\frac{1}{3}\right)^y$ OR  $y = \log_{\frac{1}{3}} x$ OR $f^{-1}: x = \left(\frac{1}{3}\right)^y$ $y = -\log_3 x$	✓ $x = \left(\frac{1}{3}\right)^y$ ✓ $y = \log_{\frac{1}{3}} x$ or $y = -\log_3 x$ (2)
7.3	$y = -5$	✓ answer (1)

7.4	Reflection about $y = x$. Reflection about the x-axis. OR Reflection about the y-axis. Then reflection about the line $y = x$. OR Reflection about the line $y = -x$ followed by reflection about the y-axis. OR Rotation through 90° in a clockwise direction. OR Rotation through 90° in an anti-clockwise direction. Reflection through the origin.	✓ reflection about $y = x$ ✓ reflection about y-axis (2) ✓ reflection about y-axis ✓ reflection about $y = x$ (2) ✓ rotation through 90° ✓ clockwise direction (2) ✓ answer ✓ answer (2) [7]
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QUESTION 8

8.1	$A = P(1 + i)^n$ $1711,41 = 1430,77 \left(1 + \frac{i}{12}\right)^{18}$ $\left(1 + \frac{i}{12}\right)^{18} = 1,196146131... \quad \text{OR} \quad \left[\frac{1711,41}{1430,77}\right]^{\frac{1}{18}} = 1,00999...$ $1 + \frac{i}{12} = 1,009999937... \quad \therefore i = 12(1,01 - 1) = 0,12 = 12\%$ $i = 0,1199992431... = 12\%$ Rate = 12, 00% p.a. compounded monthly.	✓ substitution ✓ $\left(1 + \frac{i}{12}\right)^{18} = 1,196146131...$ ✓ $1 + \frac{i}{12} = 1,009999937...$ ✓ answer (4)
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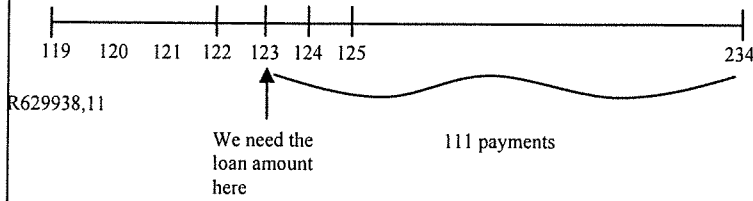
8.2.1	$P_v = \frac{x[1 - (1+i)^{-n}]}{i}$ $800000 = \frac{10000 \left[1 - \left(1 + \frac{0,14}{12} \right)^{-n} \right]}{\frac{0,14}{12}}$ $1 - \left(1 + \frac{0,14}{12} \right)^{-n} = \frac{14}{15} \quad (= 0,933333)$ $\left(1 + \frac{0,14}{12} \right)^{-n} = \frac{1}{15} \quad (= 0,06666666)$ $\log \left(1 + \frac{0,14}{12} \right)^{-n} = \log \frac{1}{15}$ $-n \log \left(1 + \frac{0,14}{12} \right) = \log \frac{1}{15} \quad \left(\begin{array}{l} -n = \frac{\log \frac{1}{15}}{\log \left(1 + \frac{0,14}{12} \right)} \\ = -233,47 \end{array} \right)$ $n = 233,47$ $\therefore$ the loan will be paid off at the end of the 234th month OR Balance outstanding after 233rd month $= 800000 \left(1 + \frac{0,14}{12} \right)^{233} - \frac{10000 \left[\left(1 + \frac{0,14}{12} \right)^{233} - 1 \right]}{\frac{0,14}{12}}$ = R4 660,04 which is less than R10 000 Therefore the loan will be paid off after 234 months. OR Total value of the loan after 234 payments $= \frac{10000 \left(1 - \left(1 + \frac{0,14}{12} \right)^{-234} \right)}{\frac{0,14}{12}}$ = R800 350,21 > R800 000 and the differences is less than R10 000 Therefore the loan will be paid off after 234 months.	✓ substitute into P_v ✓ $i = \frac{0,14}{12}$ ✓ using logs ✓ answer (4) ✓ substitution into P formula ✓ 234 ✓ answer ✓ argument (4) ✓ substitution into F formula ✓ 234 ✓ answer ✓ argument (4)
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8.2.2

Balance Outstanding after 119 months

$$= 800000 \left(1 + \frac{0,14}{12}\right)^{119} - \frac{10000 \left[\left(1 + \frac{0,14}{12}\right)^{119} - 1 \right]}{\frac{0,14}{12}}$$

$$= R629\,938,11$$

Total Payable at the end of the 123rd month

$$= 629\,938,11 \left(1 + \frac{0,14}{12}\right)^4$$

$$= R659\,853,68$$

New instalment:

$$659\,853,68 = \frac{x \left[1 - \left(1 + \frac{0,14}{12}\right)^{-111} \right]}{\frac{0,14}{12}}$$

$$x = R10\,632,39$$

$$\checkmark 800000 \left(1 + \frac{0,14}{12}\right)^{119}$$

$$\checkmark \frac{10000 \left[\left(1 + \frac{0,14}{12}\right)^{119} - 1 \right]}{\frac{0,14}{12}}$$

$$\checkmark R629\,938,11$$

$$\checkmark 629938,11 \left(1 + \frac{0,14}{12}\right)^4$$

$$\checkmark R659\,853,68$$

✓ substitution into P_v

✓ answer

(7)
[15]

QUESTION 9

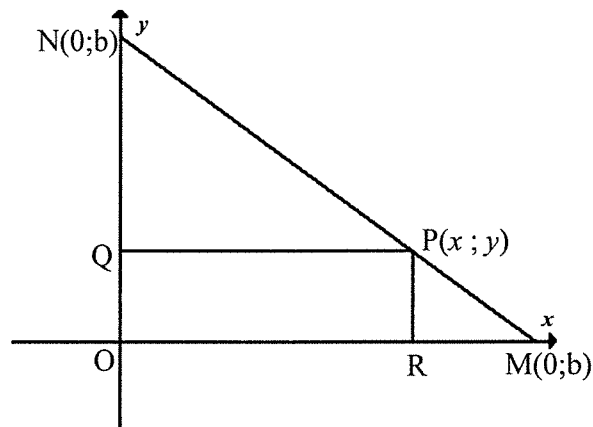
9.1	$f'(x) = \lim_{h \rightarrow 0} \frac{f(x+h) - f(x)}{h}$ $= \lim_{h \rightarrow 0} \frac{1 - 3(x+h)^2 - (1 - 3x^2)}{h}$ $= \lim_{h \rightarrow 0} \frac{1 - 3x^2 - 6xh - 3h^2 - 1 + 3x^2}{h}$ $= \lim_{h \rightarrow 0} \frac{-6xh - 3h^2}{h}$ $= \lim_{h \rightarrow 0} \frac{h(-6x - 3h)}{h}$ $= \lim_{h \rightarrow 0} (-6x - 3h)$ $= -6x$	✓ substitution into formula ✓ $1 - 3x^2 - 6xh - 3h^2$ ✓ $h(-6x - 3h)$ ✓ simplification ✓ answer (5)
9.2	$D_x \left[4 - \frac{4}{x^3} - \frac{1}{x^4} \right]$ $= D_x [4 - 4x^{-3} - x^{-4}]$ $= 12x^{-4} + 4x^{-5}$	✓ simplification ✓✓ answer (3)
9.3	$y = (1 + \sqrt{x})^2$ $y = 1 + 2\sqrt{x} + x$ $y = 1 + 2x^{\frac{1}{2}} + x$ $\frac{dy}{dx} = x^{-\frac{1}{2}} + 1$	✓ expansion ✓ $x^{\frac{1}{2}}$ ✓ 1 (3) [10]

QUESTION 10

10.1	$(-6)(-3)(+2) = 36$ y -intercept is 36 OR $g(x) = (x-6)(x^2 - x - 6)$ $g(x) = x^3 - 7x^2 + 36$ y -intercept : (0;36)	$\checkmark (-6)(-3)(+2)$ $\checkmark y$ -intercept is 36 (1) $\checkmark$ trinomial $\checkmark 36$ (1)
10.2	$g(x) = 0$ $x = 6$ or $x = 3$ or $x = -2$ intercepts are (6 ; 0) and (3 ; 0) and (-2; 0)	$\checkmark 6$ $\checkmark 3$ $\checkmark -2$ (3)
10.3	$g(x) = (x-6)(x^2 - x - 6)$ $= x^3 - 7x^2 + 36$ $g'(x) = 3x^2 - 14x$ $0 = x(3x - 14)$ $x = 0$ or $x = \frac{14}{3}$ Turning points are (0 ; 36) and $\left(\frac{14}{3}; -\frac{400}{27}\right)$	$\checkmark x^3 - 7x + 36$ $\checkmark g'(x) = 3x^2 - 14x$ $\checkmark g'(x) = 0$ $\checkmark$ answers $\checkmark \checkmark$ points (6)
10.4		$\checkmark x$ -intercepts $\checkmark \checkmark$ turning points $\checkmark$ shape (4)

10.5	$g(x).g'(x < 0$ $x < -2$ or $0 < x < 3$ or $\frac{14}{3} < x < 6$	1 mark for each inequality (3) [16]
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QUESTION 11



11.1	$m = -\frac{b}{a}$ $y - b = \frac{-b}{a}(x - 0)$ $y = \frac{-b}{a}x + b$ OR $y = mx + b$ $0 = ma + b$ $m = \frac{-b}{a}$ $y = -\frac{b}{a}x + b$ OR $\frac{x}{a} + \frac{y}{b} = 1$	✓ $m = -\frac{b}{a}$ ✓ answer (2)
11.2	$A = xy$ $A = x\left(\frac{-bx}{a} + b\right)$ $= -\frac{b}{a}x^2 + bx$ $\frac{dA}{dx} = -\frac{2b}{a}x + b$ $0 = -\frac{2b}{a}x + b$ $-ba = -2bx$ $x = \frac{a}{2}$ $y = -\frac{b}{a}\left(\frac{a}{2}\right) + b$ $= \frac{b}{2}$ $P\left(\frac{a}{2}; \frac{b}{2}\right)$ which is the midpoint of MN OR	✓ area formula ✓ substitution ✓ $\frac{dA}{dx} = -\frac{2b}{a}x + b$ ✓ $\frac{dA}{dx} = 0$ ✓ x-value ✓ y-value (6)

	$\frac{x}{a} + \frac{y}{b} = 1$ $\frac{y}{b} = 1 - \frac{x}{a}$ To maximise xy, we maximise $\frac{xy}{ab} = \frac{x}{a} \left(\frac{y}{b} \right) = \frac{x}{a} \left(1 - \frac{x}{a} \right)$ This is a maximum when $\frac{x}{a} = \frac{1}{2}$ i.e. $x = \frac{a}{2}$ By the midpoint theorem, P is then the midpoint of MN.	(6) [8]
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QUESTION 12/VRAAG 12

12.1	$9 \times 9 \times 9 \times 5 \times 4 = 14580$	$\checkmark 9 \times 9 \times 9$ $\checkmark 5 \times 4$ $\checkmark 14580$ (3)
12.2.1	$\frac{12!}{2! \cdot 2!} = 119750400$	$\checkmark 12!$ $\checkmark 2! \cdot 2!$ $\checkmark 119750400$ (3)
12.2.2	$\frac{\frac{10!}{2!}}{119750400} = \frac{1}{66} = 0,015$	$\checkmark \frac{10!}{2!}$ $\checkmark 119750400$ $\checkmark \text{answer/antwoord}$ (3) [9]
12.3.1		$\checkmark$ first branch with values/ <i>eerste tak met waardes</i> $\checkmark$ top part of second branch with values / <i>boonste gedeelte</i> van tweede tak met waardes $\checkmark$ bottom part of second branch with values / <i>onderste gedeelte</i> van tweede tak met waardes (3)
12.3.2	$P(F) = \frac{2}{3}$	$\checkmark P(F) = \frac{2}{3}$ (1)
12.3.3	$P(M/H) = \frac{1}{3} \times \frac{1}{2}$ $P(M/H) = \frac{1}{6}$	$\checkmark \checkmark P(M/H) = \frac{1}{6}$ (2)
		[15]
		TOTAL/TOTAAL: 150