



education

Department:
Education
North West Provincial Government
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

MATHEMATICS P1

SEPTEMBER 2026

MARKING GUIDELINES

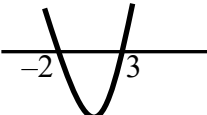
MARKS: 150

These marking guidelines consist of 18 pages.

NOTE:

- If a candidate answers a question TWICE, only mark the FIRST attempt.
- Consistent Accuracy applies in ALL aspects of the marking guidelines.

QUESTION 1

1.1.1	$(3 - x)(2x + 8) = 0$ $x = 3$ or $2x = -8$ $x = -4$	$\checkmark x = 3$ $\checkmark x = -4$ (2)
1.1.2	$3x^2 - 7x - 2 = 0$ $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ $= \frac{-(-7) \pm \sqrt{(-7)^2 - 4(3)(-2)}}{2(3)}$ $= \frac{7 \pm \sqrt{73}}{6}$ $x = 2,59$ or $x = -0,26$	$\checkmark$ substitution in the correct formula $\checkmark x = 2,59$ $\checkmark x = -0,26$ (3)
1.1.3	$x^2 - x - 6 \geq 0$ $(x + 2)(x - 3) \geq 0$ CV: $x = -2$ or $x = 3$ $\therefore x \leq -2$ or $x \geq 3$ 	$\checkmark$ factors $\checkmark$ critical values $\checkmark\checkmark$ answer (4)
1.1.4	$12^{2x} = 8(36^x)$ $(2^2 \cdot 3)^{2x} = 2^3 \cdot (2^2 \cdot 3^2)^x$ $2^{4x} \cdot 3^{2x} = 2^3 \cdot 2^{2x} \cdot 3^{2x}$ $\frac{2^{4x}}{2^3 \cdot 2^{2x}} = \frac{3^{2x}}{3^{2x}}$ $2^{2x-3} = 1$ $2^{2x-3} = 2^0$ $2x - 3 = 0$ $2x = 3$ $x = \frac{3}{2}$ OR	$\checkmark$ prime factors $\checkmark$ exponential laws $\checkmark$ 2 on one side, 3 on the other side $\checkmark$ equate exponents $\checkmark$ answer (5)

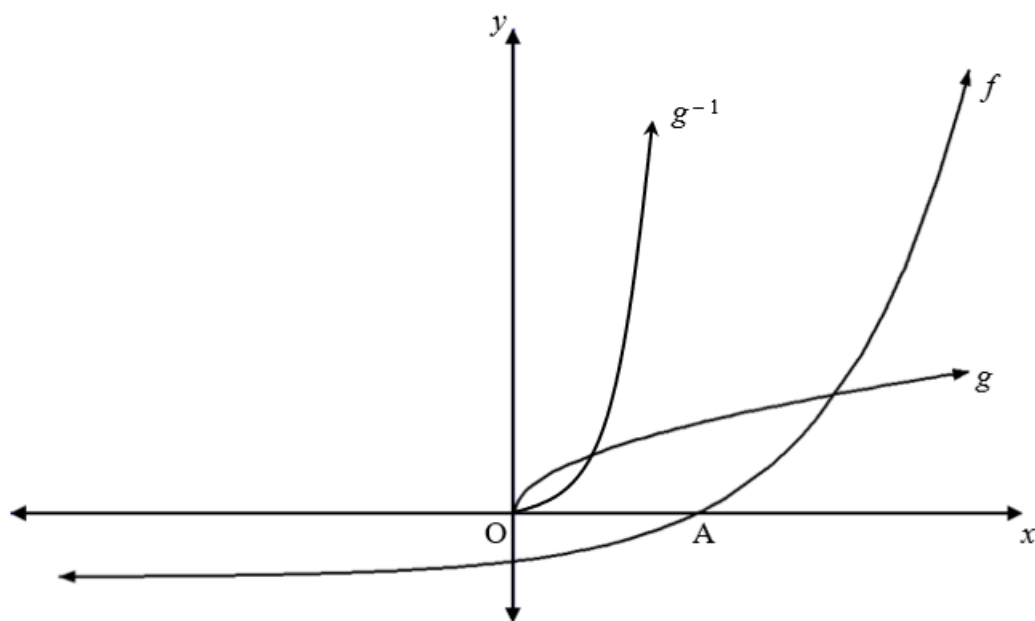
	$12^{2x} = 8(36^x)$ $(2^2 \cdot 3)^{2x} = 2^3 \cdot (2^2 \cdot 3^2)^x$ $2^{4x} \cdot 3^{2x} = 2^3 \cdot 2^{2x} \cdot 3^{2x}$ $2^{4x} \cdot 3^{2x} = 2^{3+2x} \cdot 3^{2x}$ $2^{4x} = 2^{3+2x} \quad \text{or} \quad 3^{2x} = 3^{2x}$ $4x = 3 + 2x \quad x \in \mathbb{R}$ $2x = 3$ $x = \frac{3}{2}$	✓ prime factors ✓ exponential laws ✓ 2 equations ✓ equate exponents ✓ answer (5)
1.1.5	$6\sqrt{x-5} + x = 5$ $6\sqrt{x-5} = 5 - x$ $(6\sqrt{x-5})^2 = (5-x)^2$ $36(x-5) = 25 - 10x + x^2$ $36x - 180 = 25 - 10x + x^2$ $0 = x^2 - 46x + 205$ $0 = (x-41)(x-5)$ $x = 41 \quad \text{or} \quad x = 5$ <i>n.a</i>	✓ isolate root ✓ square both sides ✓ standard form ✓ both answers ✓ selection (5)
1.2	$x + y = -2$ $y = -x - 2$ $x^2 - 4x + y^2 + 8y + 2 = 0$ $x^2 - 4x + (-x-2)^2 + 8(-x-2) + 2 = 0$ $x^2 - 4x + x^2 + 4x + 4 - 8x - 16 + 2 = 0$ $2x^2 - 8x - 10 = 0$ $x^2 - 4x - 5 = 0$ $(x+1)(x-5) = 0$ $x = -1 \quad \text{or} \quad x = 5$ $y = -(-1) - 2 \quad y = -(5) - 2$ $= -1 \quad = -7$ OR	✓ y subject ✓ substitution ✓ standard form ✓ both x-values ✓ both y-values (5)

	$x + y = -2$ $x = -y - 2$ $(-y - 2)^2 - 4(-y - 2) + y^2 + 8y + 2 = 0$ $y^2 + 4y + 4 + 4y + 8 + y^2 + 8y + 2 = 0$ $2y^2 + 16y + 14 = 0$ $y^2 + 8y + 7 = 0$ $(y + 7)(y + 1) = 0$ $y = -7 \quad \text{or} \quad y = -1$ $x = -(-7) - 2 \quad x = -(-1) - 2$ $= 5 \qquad \qquad = -1$	✓ x subject ✓ substitution ✓ standard form ✓ both y -values ✓ both x -values (5)
1.3	$x^2 + k(2x - 4) + 5$ $= x^2 + 2kx - 4k + 5$ $= (x^2 + 2kx + k^2) - k^2 - 4k + 5$ $= (x + k)^2 - k^2 - 4k + 5$ For a perfect square: $-k^2 - 4k + 5 = 0$ $k^2 + 4k - 5 = 0$ $(k + 5)(k - 1) = 0$ $k = -5 \quad \text{or} \quad k = 1$ OR $x^2 + k(2x - 4) + 5$ $= x^2 + 2kx - 4k + 5$ $\Delta = b^2 - 4ac$ $= (2k)^2 - 4(1)(-4k + 5)$ $= 4k^2 + 16k - 20$ For a perfect square: $\therefore$ Equal roots $\therefore \Delta = 0$ $4k^2 + 16k - 20 = 0$ $k^2 + 4k - 5 = 0$ $(k + 5)(k - 1) = 0$ $k = -5 \quad \text{or} \quad k = 1$	✓ simplify ✓ complete square ✓ $-k^2 - 4k + 5 = 0$ ✓ both answers (4) ✓ simplify ✓ substitution ✓ $4k^2 + 16k - 20 = 0$ ✓ both answers (4)

[28]

QUESTION 2

2.1.1	$\sum_{k=4}^p (2k - 5) = 3 + 5 + 7 + \dots$	✓ answer (1)
2.1.2	$T_n = a + (n - 1)d$ $= 3 + (n - 1)(2)$ $= 2n + 1$	✓ substitution ✓ answer (2)
2.1.3	$T_{50} = 2(50) + 1$ $= 101$	✓ answer (1)
2.1.4	$\sum_{k=4}^p (2k - 5) < 5\,000$ $3 + 5 + 7 + \dots < 5\,000$ $S_n = \frac{n}{2}[2a + (n - 1)d]$ $\frac{n}{2}[2(3) + (n - 1)(2)] < 5\,000$ $6n + 2n^2 - 2n < 10\,000$ $2n^2 + 4n - 10\,000 < 0$ $n^2 + 2n - 5\,000 < 0$ $-71,71 < n < 69,72$ but $n \in N$ $\therefore 0 < n \leq 69$ or $1 \leq n \leq 69$ $0 < p - 4 + 1 \leq 69$ $1 \leq p - 4 + 1 \leq 69$ $\therefore 3 < p \leq 72$ $4 \leq p \leq 72$	✓ substitution ✓ standard form ✓ critical values ✓ answer for n ✓ endpoints ✓ notation (6)
2.2.1	$-1 + k ; 2 + k ; 8 + k ; \dots$ $\frac{2 + k}{-1 + k} = \frac{8 + k}{2 + k}$ $(2 + k)^2 = (8 + k)(-1 + k)$ $4 + 4k + k^2 = -8 + 8k - k + k^2$ $12 = 3k$ $k = 4$	✓ ratio ✓ simplify ✓ answer (3)
2.2.2	3; 6; 12	✓ answer (1)
2.2.3	$r = 2$ or $r > 1$	✓ answer (1)
2.2.4	$S_n = \frac{a(r^n - 1)}{r - 1}$ $S_{15} = \frac{3(2^{15} - 1)}{2 - 1}$ $= 98\,301$	✓ substitution ✓ answer (2)
		[17]

QUESTION 4

4.1	$y > -2$	✓ $y > -2$ (1)
4.2	$0 = 2^{x-1} - 2$ $2^1 = 2^{x-1}$ $x - 1 = 1$ $x = 2$ $\therefore A(2; 0)$	✓ $y = 0$ ✓ $x = 2$ (2)
4.3	$g: y = 2\sqrt{x}; x \geq 0 \ y \geq 0$ $g^{-1}: x = 2\sqrt{y}; y \geq 0 \ x \geq 0$ $\sqrt{y} = \frac{x}{2}$ $y = \frac{x^2}{4}; y \geq 0 \ x \geq 0$	✓ swop x and y ✓ $y = \frac{x^2}{4}$ (2)

4.4	$D(x) = 2\sqrt{x} - \frac{x^2}{4}$ $= 2x^{\frac{1}{2}} - \frac{x^2}{4}$ $D'(x) = x^{-\frac{1}{2}} - \frac{2x}{4}$ $0 = \frac{1}{\sqrt{x}} - \frac{x}{2}$ $\frac{x}{2} = \frac{1}{\sqrt{x}}$ $\left(\frac{x}{2}\right)^2 = \left(\frac{1}{\sqrt{x}}\right)^2$ $\frac{x^2}{4} = \frac{1}{x}$ $x^3 = 4$ $x = \sqrt[3]{4}$	✓ distance ✓ $D'(x) = x^{-\frac{1}{2}} - \frac{2x}{4}$ ✓ square both sides ✓ answer for x (4)
4.5	$D(x) = 2\left(\sqrt[3]{4}\right)^{\frac{1}{2}} - \frac{\left(\sqrt[3]{4}\right)^2}{4} = 1,89$ $\therefore k > 1,89$	✓ maximum distance ✓ answer (2)
4.6	$f(x) = 2^{x-1} - 2$ Reflection about y-axis $2^{-x-1} - 2$ $2^{-(x+1)} - 2$ $\left(\frac{1}{2}\right)^{x+1} - 2$ Then translated by 1 unit to the right and translated 2 units up	✓ reflection about y-axis ✓ 1 unit right ✓ 2 units up (3)
		[14]

QUESTION 5

5.1	$(3 ; -2)$	✓ $(3 ; -2)$ (1)
5.2	$0 = \frac{1}{2}(x - 3)^2 - 2$ $2 = \frac{1}{2}(x - 3)^2$ $4 = (x - 3)^2$ $\pm 2 = x - 3$ $x = 5 \quad \text{or} \quad x = 1$ $n.a \quad \therefore A(1;0)$ OR $0 = \frac{1}{2}(x - 3)^2 - 2$ $0 = \frac{1}{2}(x^2 - 6x + 9) - 2$ $0 = \frac{1}{2}x^2 - 3x + \frac{5}{2}$ $0 = x^2 - 6x + 5$ $0 = (x - 5)(x - 1)$ $x = 5 \quad \text{or} \quad x = 1$ $n.a \quad \therefore A(1;0)$	✓ $y = 0$ ✓ simplify ✓ $x = 1$ (3)
5.3	$y \in \mathbb{R}; y \neq -2$ OR $y \in (-\infty; -2) \cup (-2; \infty)$	✓ $y \neq -2$ (1) ✓ $(-\infty; -2) \cup (-2; \infty)$ (1)
5.4	$g(x) = \frac{a}{x + p} + q$ $= \frac{a}{x - 1} - 2$ $2 = \frac{a}{0 - 1} - 2$ $4 = -a$ $a = -4$ $g(x) = \frac{-4}{x - 1} - 2$	✓ substitution of p and q ✓ substitution of $B(0 ; 2)$ ✓ answer for a (3)

5.5	$y = -x + c$ $-2 = -(1) + c$ $-1 = c$ $k(x) = -x - 1$ OR $y = -(x + p) + q$ $= -(x - 1) - 2$ $= -x + 1 - 2$ $k(x) = -x - 1$	✓ $m = -1$ ✓ substitution (1 ; -2) ✓ answer (3) ✓ $m = -1$ ✓ substitution (1 ; -2) ✓ answer (3)
5.6	$x \in (-\infty ; -1] \cup (1 ; 3]$ OR $x \leq -1 \text{ or } 1 < x \leq 3$	✓ $(-\infty ; -1]$ ✓✓ $(1 ; 3]$ (3) ✓ $x \leq -1$ ✓✓ $1 < x \leq 3$ (3)
5.7	$f(x) = \frac{1}{2}(x - 3)^2 - 2$ $= \frac{1}{2}(x^2 - 6x + 9) - 2$ $= \frac{1}{2}x^2 - 3x + \frac{5}{2}$ $f'(x) = x - 3$ $-1 = x - 3$ $x = 2$ $f(2) = -1,5$ $k(2) = -(2) - 1$ $= -3$ Vertical distance between f and k : $f(2) - k(2) = -1,5 - (-3)$ $= 1,5$ $\therefore 1,5 < t < 2$ OR	✓ simplify ✓ $f'(x) = -1$ ✓ $x = 2$ ✓ $f(2) = -1,5$ ✓ $k(2) = -3$ ✓ distance ✓ answer (7)

	$f(x) = \frac{1}{2}(x-3)^2 - 2$ $= \frac{1}{2}(x^2 - 6x + 9) - 2$ $= \frac{1}{2}x^2 - 3x + \frac{5}{2}$ $\frac{1}{2}x^2 - 3x + \frac{5}{2} = -x - 1 + t$ $\frac{1}{2}x^2 - 2x + \left(\frac{7}{2} - t\right) = 0$ $\Delta = b^2 - 4ac$ $0 = (-2)^2 - 4\left(\frac{1}{2}\right)\left(\frac{7}{2} - t\right)$ $0 = 4 - 7 + 2t$ $2t = 3$ $t = \frac{3}{2} = 1,5$ $\therefore 1,5 < t < 2$	✓ simplification ✓ equating ✓ standard form ✓ $\Delta = 0$ ✓ $t = 1,5$ ✓ $t < 2$ ✓ answer
		(7)
		[21]

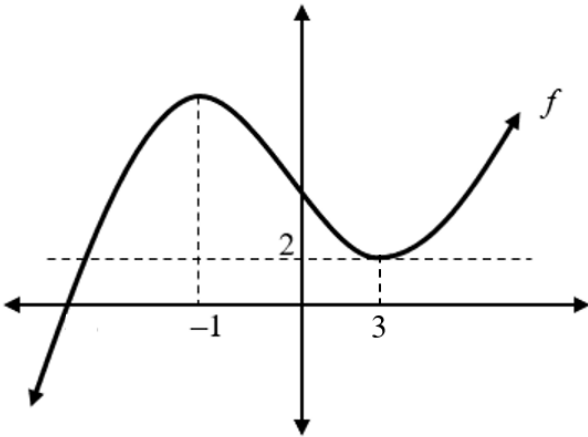
QUESTION 6

6.1	$A = P(1 + i)^n$ $= 1\,200\,000 \left(1 + \frac{0,098}{12}\right)^3$ $= R1\,229\,640,75$	✓ i and n ✓ substitution ✓ answer (3)
6.2	$P = \frac{x[1 - (1 + i)^{-n}]}{i}$ $1\,229\,640,75 = \frac{15\,000 \left[1 - \left(1 + \frac{0,098}{12}\right)^{-n}\right]}{\frac{0,098}{12}}$ $0,6694710772 = 1 - \left(1 + \frac{0,098}{12}\right)^{-n}$ $\left(1 + \frac{0,098}{12}\right)^{-n} = 0,3305289228$ $-n = \log_{\left(1 + \frac{0,098}{12}\right)} 0,3305289228$ $-n = -136,1112836$ $\therefore 137 \text{ monthly instalments}$	✓ substitution ✓ simplify ✓ use of logs ✓ answer (4)
6.3	$A = P(1 + i)^n \quad \text{or}$ $A = 1\,229\,640,754 \left(1 + \frac{0,098}{12}\right)^{77} \quad A = 1\,200\,000 \left(1 + \frac{0,098}{12}\right)^{80}$ $= R2\,300\,212,589$ $F = \frac{x[(1 + i)^n - 1]}{i}$ $= \frac{15\,000 \left[\left(1 + \frac{0,098}{12}\right)^{77} - 1\right]}{\frac{0,098}{12}}$ $= R1\,599\,130,824$ $\text{Outstanding balance} = R2\,300\,212,589 - R1\,599\,130,824$ $= R701\,081,76$ $\text{Instalments paid} = 77(R15\,000)$ $= R1\,155\,000$ $\text{Total cost after 77 months} = R1\,155\,000 + R701\,081,76$ $= R1\,856\,081,767$ $\therefore \text{Profit} = R2\,000\,000 - R1\,856\,081,767$ $= R143\,918,24$ OR	✓ substitution into A formula ✓ substitution into F formula ✓ outstanding balance ✓ instalments paid ✓ total cost ✓ profit (6)

	Outstanding time period = $136,1112836 - 77$ $= 59,1112836$ $P = \frac{x \left[1 - (1 + i)^{-n} \right]}{i}$ $= \frac{15\,000 \left[1 - \left(1 + \frac{0,098}{12} \right)^{-59,1112836} \right]}{\frac{0,098}{12}}$ $= R701\,081,76$ Already paid = $77(R15\,000)$ $= R1\,155\,000$ Total cost after 77 months = $R1\,155\,000 + R701\,081,76$ $= R1\,856\,081,767$ $\therefore$ Profit = $R2\,000\,000 - R1\,856\,081,767$ $= R143\,918,24$	✓ n ✓ substitution into P formula ✓ outstanding balance ✓ instalments paid ✓ total cost ✓ profit (6)
		[13]

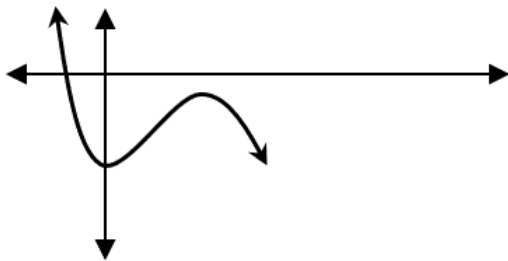
QUESTION 7

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

7.2.2	$f(x) = 2\sqrt[3]{x^4} + \frac{3}{x^5}$ $= 2x^{\frac{4}{3}} + 3x^{-5}$ $f'(x) = \frac{8}{3}x^{\frac{1}{3}} - 15x^{-6}$	$\checkmark 2x^{\frac{4}{3}} \quad \checkmark 3x^{-5}$ $\checkmark \frac{8}{3}x^{\frac{1}{3}} \quad \checkmark -15x^{-6}$ (4)
7.3		$\checkmark$ only one x -intercept at $x < -1$ $\checkmark$ maximum turning point at $x = -1$ $\checkmark$ minimum turning point at $(3 ; 2)$ $\checkmark$ shape (4)
		[16]

QUESTION 8

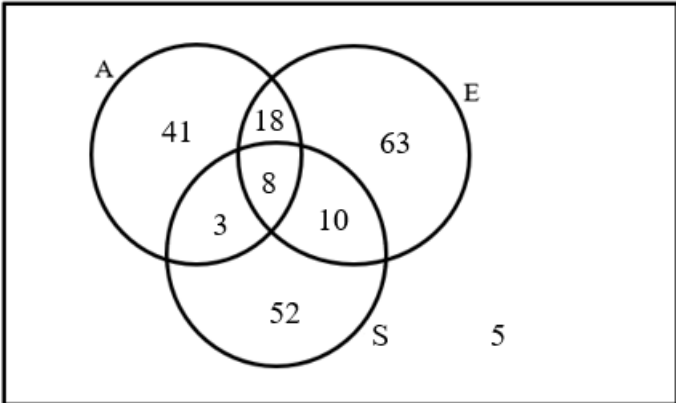
8.1	$f(x) = -2x^3 + 21x^2 - 60x + 43$ $f'(x) = -6x^2 + 42x - 60$ $0 = -6x^2 + 42x - 60$ $0 = x^2 - 7x + 10$ $0 = (x - 2)(x - 5)$ $x_A = 2 \text{ or } x_B = 5$	$\checkmark 0 = -6x^2 + 42x - 60$ $\checkmark$ factors $\checkmark$ both answers (3)
8.2	$f''(x) = -12x + 42 \quad \text{OR} \quad x = \frac{5+2}{2}$ $0 = -12x + 42$ $12x = 42$ $x = \frac{7}{2} = 3,5$ $f(3,5) = -2(3,5)^3 + 21(3,5)^2 - 60(3,5) + 43$ $= 4,5$ $f'(3,5) = -6(3,5)^2 + 42(3,5) - 60$ $= 13,5$ $y - y_1 = m(x - x_1)$ $y - 4,5 = 13,5(x - 3,5)$ $y = 13,5x - 42,75$	$\checkmark$ method $\checkmark$ x -value $\checkmark$ y -value $\checkmark f'(3,5) = 13,5$ $\checkmark$ answer (5)

8.3	$f(5) = -2(5)^3 + 21(5)^2 - 60(5) + 43$ $= 18$  $\therefore$ No positive roots	✓ $f(5) = 18$ ✓ method ✓ answer (3)
		[11]

QUESTION 9

9.1	$A = l^2 + 2\pi rh$ $= (2x)^2 + 2\pi xh$ $= 4x^2 + 2\pi xh$	✓ $(2x)^2 + 2\pi xh$ (1)
9.2	$20 = 4x^2 + 2\pi xh$ $20 - 4x^2 = 2\pi xh$ $h = \frac{20 - 4x^2}{2\pi x}$ $h(x) = \frac{20}{2\pi x} - \frac{4x^2}{2\pi x}$ $h(x) = \frac{10}{\pi x} - \frac{2x}{\pi}$	✓ $A = 20$ ✓ h the subject ✓ answer (3)
9.3	$V(x) = \pi r^2 h$ $= \pi x^2 \left(\frac{10}{\pi x} - \frac{2x}{\pi} \right)$ $= 10x - 2x^3$	✓ substitution (1)
9.4	$V'(x) = 10 - 6x^2$ $0 = 10 - 6x^2$ $6x^2 = 10$ $x^2 = \frac{10}{6}$ $x = 1,29$ $V(1,29) = 10(1,29) - 2(1,29)^3$ $= 8,61\text{m}^3$	✓ $V'(x)$ ✓ $V'(x) = 0$ ✓ answer for x ✓ answer (4)
		[9]

QUESTION 10

10.1		✓ 8; 5 ✓ 3; 18; 10 ✓ 41; 52; 63 (3)
10.2	$P(\text{only ONE language}) = \frac{41 + 63 + 52}{200}$ $= \frac{156}{200} = 0,78 = 78\%$	✓ substitution ✓ answer (2)
10.3	$P(A) \times P(S) = \frac{70}{200} \times \frac{73}{200}$ $= \frac{511}{4\,000} \approx 0,13$ $P(A \text{ and } S) = \frac{11}{200} = 0,06$ $\therefore P(A) \times P(S) \neq P(A \text{ and } S)$ $\therefore \text{Not independent}$	✓ $P(A) \times P(S)$ ✓ $P(A \text{ and } S)$ ✓ $P(A) \times P(S) \neq P(A \text{ and } S)$ ✓ conclusion (4)
		[9]

QUESTION 11

11.1	$8! = 40\,320$	✓ answer (1)
11.2	$\frac{(5!)(4!)}{8!}$ $= \frac{1}{14} = 0,07$	✓ $(5!)(4!)$ ✓ answer (A) (2)
11.3	Mathematics and Physical Sciences next to each other $= 3 \times 5! \times 2! \times 2 = 1\,440$ Total $= 3 \times 6! \times 2 = 4\,320$ Mathematics and Physical Sciences not next to each other $= 4\,320 - 1\,440$ $= 2\,880$	✓ $3 \times 5! \times 2! \times 2$ ✓ $3 \times 6! \times 2$ ✓ answer (3)
		[6]
	TOTAL: 150	

COGNITIVE LEVELS

MATHEMATICS P1

	COGNITIVE LEVELS				TOPICS						
	LEVEL 1 (20%)	LEVEL 2 (35%)	LEVEL 3 (30%)	LEVEL 4 (15%)							
QUESTION	KNOWLEDGE	ROUTINE PROCEDURES	COMPLEX PROCEDURES	PROBLEM SOLVING	ALGEBRA	PATTERNS	FUNCTIONS	FINANCE	DIFFERENTIATION	PROBABILITY	TOTAL MARKS
1.1.1	2				2						
1.1.2	3				3						
1.1.3		4			4						
1.1.4			5		5						
1.1.5		5			5						
1.2		5			5						
1.3				4	4						28
2.1.1	1					1					
2.1.2	2					2					
2.1.3	1					1					
2.1.4			6			6					
2.2.1		3				3					
2.2.2	1					1					
2.2.3	1					1					
2.2.4	2					2					17
3				6		6					6
4.1	1						1				
4.2		2					2				
4.3		2					2				
4.4				4			4				
4.5				2			2				
4.6			3				3				14
5.1	1						1				
5.2		3					3				
5.3	1						1				
5.4		3					3				
5.5	3						3				
5.6	3						3				
5.7			7				7				21
6.1	3							3			
6.2			4					4			
6.3				6				6			13

	COGNITIVE LEVELS				TOPICS						
	LEVEL 1 (25%)	LEVEL 2 (30 %)	LEVEL 3 (30%)	LEVEL 4 (15%)							
QUESTION	KNOWLEDGE	ROUTINE PROCEDURES	COMPLEX PROCEDURES	PROBLEM SOLVING	ALGEBRA	PATTERNS	FUNCTIONS	FINANCE	DIFFERENTIATION	PROBABILITY	TOTAL MARKS
7.1	5								5		
7.2.1		3							3		
7.2.2		4							4		
7.3			4						4		16
8.1		3							3		
8.2			5						5		
8.3			3						3		11
9.1		1							1		
9.2		3							3		
9.3			5						5		9
10.1		3								3	
10.2		2								2	
10.3		4								4	9
11.1	1										
11.2		2									
11.3			3								6
TOT	31	52	45	22	28	23	35	13	36	15	150
%	20%	35%	30%	15%							
Pol	20%	35%	30%	15%	25	25	35	15	35	15	150