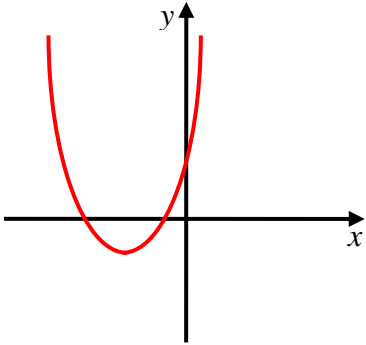


**Edexcel GCE
Core Mathematics C1
Silver Level S3
(Mark Scheme)**

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Question Number	Scheme	Marks
<p>5. (a)</p>	<p>Gradient of l_2 is $\frac{1}{2}$ or 0.5 or $\frac{-1}{-2}$</p> <p>Either $y - 6 = \frac{1}{2}(x - 5)$</p> <p>or $y = \frac{1}{2}x + c$ and $6 = \frac{1}{2}(5) + c \Rightarrow c = (\frac{7}{2})$.</p> <p>$x - 2y + 7 = 0$ or $-x + 2y - 7 = 0$</p> <p>or $k(x - 2y + 7) = 0$ with k an integer</p>	<p>B1</p> <p>M1</p> <p>A1</p> <p>(3)</p>
<p>(b)</p>	<p>Puts $x = 0$, or $y = 0$ in their equation and solves to find appropriate co-ordinate</p> <p>x-coordinate of A is -7 and y-coordinate of B is $\frac{7}{2}$.</p>	<p>M1</p> <p>A1 cao</p> <p>(2)</p>
<p>(c)</p>	<p>Area $OAB = \frac{1}{2}(7)\left(\frac{7}{2}\right) = \frac{49}{4}$ (units)²</p>	<p>M1</p> <p>A1 cso</p> <p>$\frac{49}{4}$</p> <p>(2)</p> <p>[7]</p>
<p>6.</p>	<p>(a) $y = \frac{x^2 - 5x - 24}{x} = x - 5 - 24x^{-1}$ (oe, e.g. $x + 3 - 8 - \frac{24}{x}$)</p> <p>$\frac{dy}{dx} = 1 + 24x^{-2}$ or $\frac{dy}{dx} = 1 + \frac{24}{x^2}$</p> <p>(b) $x = 2: y = -15$</p> <p>$\left(\frac{dy}{dx}\right) = 1 + \frac{24}{4} = 7$</p> <p>$y + 15 = 7(x - 2)$ (or equiv., e.g. $y = 7x - 29$)</p> <p>Allow $\frac{y + 15}{x - 2} = 7$</p>	<p>M1 A1</p> <p>M1 A1</p> <p>(4)</p> <p>B1</p> <p>B1ft</p> <p>M1 A1</p> <p>(4)</p> <p>[8]</p>

Question Number	Scheme	Marks
<p>7. (a)</p> <p>(b)</p> <p>(c)</p> <p>(d)</p>	<p>$1(p + 1)$ or $p + 1$</p> <p>$((a))(p + (a))$ [(a) must be a function of p] $[(p + 1)(p + p + 1)]$ $= 1 + 3p + 2p^2$</p> <p>$1 + 3p + 2p^2 = 1$ $p(2p + 3) = 0$ $p = \dots$ $p = -\frac{3}{2}$</p> <p>Noting that even terms are the same. $x_{2008} = -\frac{1}{2}$</p>	<p>B1 (1)</p> <p>M1 A1 cso (2)</p> <p>M1 M1 A1 (3)</p> <p>M1 A1 (2)</p> <p>[8]</p>
<p>8. (a)</p> <p>(b)</p> <p>(c)</p>	<p>AB: $m = \frac{2-7}{8-6}, \left(= -\frac{5}{2} \right)$</p> <p>Using $m_1 m_2 = -1$: $m_2 = \frac{2}{5}$</p> <p>$y - 7 = \frac{2}{5}(x - 6),$ $2x - 5y + 23 = 0$ (o.e. with integer coefficients)</p> <p>Using $x = 0$ in the answer to (a), $y = \frac{23}{5}$ or 4.6</p> <p>Area of triangle = $\frac{1}{2} \times 8 \times \frac{23}{5} = \frac{92}{5}$ (o.e) e.g. $\left(18\frac{2}{5}, 18.4, \frac{184}{10} \right)$</p>	<p>B1</p> <p>M1</p> <p>M1, A1 (4)</p> <p>M1 A1ft (2)</p> <p>M1 A1 (2)</p> <p>[8]</p>

Question Number	Scheme	Marks
<p>9. (a)</p>	$S_{10} = \frac{10}{2}[2P + 9 \times 2T] \quad \text{or} \quad \frac{10}{2}(P + [P + 18T])$ <p>e.g. $5[2P + 18T] = (\pounds) (10P + 90T) \quad \text{or} \quad (\pounds) 10P + 90T \quad (*)$</p> <p>(b) Scheme 2: $S_{10} = \frac{10}{2}[2(P + 1800) + 9T] = \{10P + 18000 + 45T\}$</p> $10P + 90T = 10P + 18000 + 45T$ $90T = 18000 + 45T$ $T = 400 \quad (\text{only})$ <p>(c) Scheme 2, Year 10 salary: $[a + (n - 1)d] = (P + 1800) + 9T$</p> $P + 1800 + "3600" = 29850$ $P = (\pounds) \underline{24450}$	<p>M1</p> <p>A1cso (2)</p> <p>M1A1</p> <p>M1</p> <p>A1 (4)</p> <p>B1ft</p> <p>M1</p> <p>A1 (3)</p> <p>[9]</p>
<p>10. (a)</p>	<p>This may be done by completion of square or by expansion and comparing coefficients</p> $a = 4$ $b = 1$ <p>All three of $a = 4, b = 1$ and $c = -1$</p> <p>(b)</p>  <p>U shaped quadratic graph.</p> <p>The curve is correctly positioned with the minimum in the third quadrant. It crosses x axis twice on negative x axis and y axis once on positive y axis.</p> <p>Curve cuts y-axis at $(\{0\}, 3)$. only</p> <p>Curve cuts x-axis at $(-\frac{3}{2}, \{0\})$ and $(-\frac{1}{2}, \{0\})$.</p>	<p>B1</p> <p>B1</p> <p>B1 (3)</p> <p>M1</p> <p>A1</p> <p>B1</p> <p>B1 (4)</p> <p>[7]</p>

Question Number	Scheme	Marks
11. (a)	$y = -\frac{3}{2}x(+4) \text{ Gradient} = -\frac{3}{2}$	M1 A1 (2)
(b)	$3x + 2 = -\frac{3}{2}x + 4 \quad x = \dots, \frac{4}{9}$ $y = 3\left(\frac{4}{9}\right) + 2 = \frac{10}{3} \left(= 3\frac{1}{3}\right)$	M1A1 A1 (3)
(c)	<p>Where $y = 1$, $l_1 : x_A = -\frac{1}{3}$ $l_2 : x_B = 2$</p> $\text{Area} = \frac{1}{2}(x_B - x_A)(y_P - 1)$ $= \frac{1}{2} \times \frac{7}{3} \times \frac{7}{3} = \frac{49}{18} = 2\frac{13}{18}$	M1 A1 M1 o.e. A1 (4) [9]

Statistics for C1 Practice Paper Silver Level S3

Qu	Max score	Modal score	Mean %	Mean score for students achieving grade:							
				ALL	A*	A	B	C	D	E	U
1	2		81	1.62	1.98	1.91	1.79	1.70	1.59	1.49	1.11
2	6		77	4.60	5.92	5.79	5.35	4.92	4.59	4.14	2.97
3	4		93	3.70	4.00	3.94	3.82	3.75	3.73	3.36	2.88
4	7		74	5.16		6.82	6.40	5.94	5.37	4.67	3.23
5	7		76	5.29	6.89	6.73	6.31	5.95	5.37	4.84	3.08
6	8		64	5.12		7.65	6.99	6.09	4.60	3.96	2.10
7	8		66	5.24		7.59	6.64	5.92	5.46	4.79	3.11
8	8		62	4.96		7.31	6.49	5.64	4.52	3.24	1.33
9	9		61	5.51	8.67	8.05	7.06	6.27	5.48	4.68	2.64
10	7		60	4.22	6.85	6.03	4.89	4.28	3.74	3.32	2.26
11	9		61	5.50		7.99	6.87	5.98	4.94	3.91	1.95
	75		68	50.92		69.81	62.61	56.44	49.39	42.40	26.66