Name:	Date:
Question 1: A function is given by k(x) = $\frac{x}{8}$ + 1. Find the inverse function k⁻¹(x).	🚂 3·3 Outcome 1
Question 2: Show that $(x + 2)$ is a factor of $x^3 - 10x^2 + 8x + 64$ and hence factorise it fully.	🚂 7·1 Bronze Outcome 1
Question 3: Find the coordinates of the stationary points of the curve with equation y = 2x³ - 9x² + 12x + 5 and determine their nature.	🚂 6·5 Bronze Outcome 1 🚂 6·5 Silver Outcome 2
Question 4: Express $-2x^2 + 8x + 7$ in the form $a(x + b)^2 + c$.	🚂 8·2 Silver Outcome 1
Question 5: Show that the line y = 2x - 5 is a tangent to the curve y = x² - 6x + 11 and find the coordinates of the point of contact.	🚂 8·5 Silver Outcome 2

My score:

Exam Questions

Question 1:

The curve $y = f(x)$ is such that $\dfrac{dy}{dx} = 4x - 6x^2$.

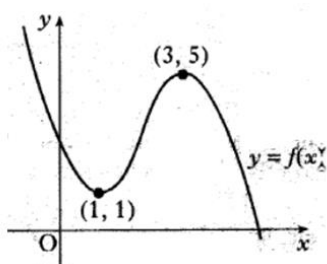The curve passes through the point (−1, 9).

Express y in terms of x.   **4**

Question 2:

The graph of the cubic function $y = f(x)$ is shown in the diagram. There are turning points at (1, 1) and (3, 5).

Sketch the graph of $y = f'(x)$.

3

Question 3:

Solve the equation

$3\cos 2x° + \cos x° = -1$

in the interval $0 \le x \le 360$.   **5**

My score: