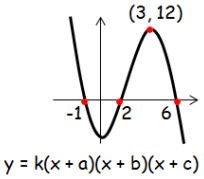
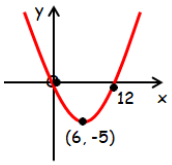
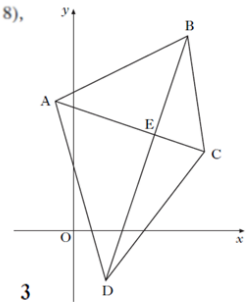
Name:	Date:
Question 1: Factorise fully $f(x) = x^3 - 57x + 56$.	7·1 Silver Outcome 2
Question 2: The equation of the cubic shown is of the form y = k(x + a)(x + b)(x + c).  y = k(x + a)(x + b)(x + c) What is the equation of this cubic?	8·1 Gold Outcome 3
Question 3: Find the coordinates of the stationary points of the curve with equation $y = x^3 + 9x^2 + 24x - 3$ and determine their nature.	6·5 Bronze Outcome 1 6·5 Silver Outcome 2
Question 4: Evaluate $\int_1^4 2x\,dx$	9·2 Bronze Outcome 1
Question 5: The graph of y = f(x) is shown below.  Sketch the graph of y = f'(x).	6·4 Gold Outcome 3
My score:	

Exam Questions

Question 1:

A quadrilateral has vertices A(−1, 8), B(7, 12), C(8, 5) and D(2, −3) as shown in the diagram.



(*a*) Find the equation of diagonal BD. **2**

(*b*) The equation of diagonal AC is $x + 3y = 23$.

Find the coordinates of E, the point of intersection of the diagonals. **3**

(*c*) (i) Find the equation of the perpendicular bisector of AB.

(ii) Show that this line passes through E. **5**

Question 2:

Find the value of k such that the equation $kx^2 + kx + 6 = 0$, $k \neq 0$, has equal roots. **3**

Question 3:

Find $\int \frac{4x^3 - 1}{x^2}\,dx, \quad x \neq 0.$ **4**

My score: