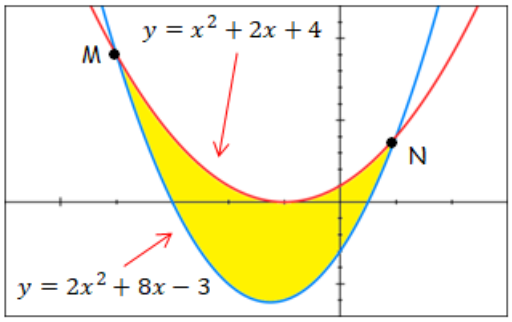
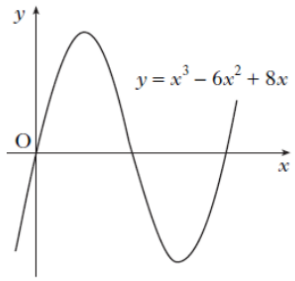
Name:	Date:
Question 1: A function is given as $h(r) = 2r^3 - 11$. Calculate h'(-1).	6·2 Bronze Outcome 1
Question 2: Show that $(x + 4)$ is a factor of $x^3 + 6x^2 + 5x - 12$ and hence factorise it fully.	7·1 Bronze Outcome 1
Question 3: Solve $x^2 + 6x - 16 < 0$.	8·3 Silver Outcome 2
Question 4: The curves $y = x^2 + 2x + 4$ and $y = 2x^2 + 8x - 3$ intersect at points M and N.  Calculate the area enclosed by the two curves.	9·4 Gold Outcome 3
Question 5: Find the maximum and minimum values for $f(x) = x^3 - 27x$ in the closed interval $-2 \leq x \leq 4$.	6·6 Outcome 1
My score:	

Exam Questions

Question 1:

The diagram shows a sketch of the curve with equation $y = x^3 - 6x^2 + 8x$.

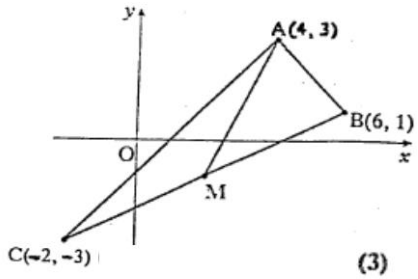


(*a*) Find the coordinates of the points on the curve where the gradient of the tangent is –1. **5**

(*b*) The line $y = 4 - x$ is a tangent to this curve at a point A. Find the coordinates of A. **2**

Question 2:

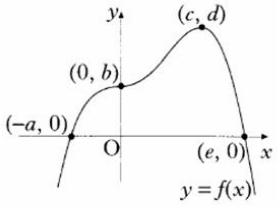
A triangle ABC has vertices **A(4, 3)**, **B(6, 1)** and **C(–2, –3)** as shown in the diagram. Find the equation of **AM**, the median from **A**.



(3)

Question 3:

The graph of a function f intersects the x-axis at $(-a, 0)$ and $(e, 0)$ as shown.
There is a point of inflexion at $(0, b)$ and a maximum turning point at (c, d).



Sketch the graph of the derived function f'. **3**

My score: