1  Fig. 12 is a sketch of the curve \( y = 2x^2 - 11x + 12 \).

(i) Show that the curve intersects the \( x \)-axis at \((4, 0)\) and find the coordinates of the other point of intersection of the curve and the \( x \)-axis. [3]

(ii) Find the equation of the normal to the curve at the point \((4, 0)\).

Show also that the area of the triangle bounded by this normal and the axes is 1.6 units\(^2\). [6]

(iii) Find the area of the region bounded by the curve and the \( x \)-axis. [3]

2  A curve has equation \( y = x^3 - 6x^2 + 12 \).

(i) Use calculus to find the coordinates of the turning points of this curve. Determine also the nature of these turning points. [7]

(ii) Find, in the form \( y = mx + c \), the equation of the normal to the curve at the point \((2, -4)\). [4]