AS Maths Key Skills Check 8

CM

Name: _____

1. The curve C has the equation $y = x^2 - x - 12$. The finite region R lies beneath the x-axis and is bounded by the curve C and the x-axis. Find the area of the region R.	
2. Find the coordinates of intersection between the curves $y = x + 2,\ y = 3x^2 - 5x + 2$	
3. The curve C has the equation $y = \mathrm{f}(x)$ where $\mathrm{f}(x) = x^3 - 4x$. (a) Find the coordinates of the points where C crosses or meets the coordinate axes. (b) Show that the equation of the curve with equation $y = \mathrm{f}(x - 2)$ can be written in the form $ax^3 + bx^2 + cx + d$ where a, b, c and d are constants to be found. (c) Sketch the curve with equation $y = \mathrm{f}(x - 2)$	
4. Give a counter-example to the claim that all natural numbers are divisible by some prime.	