IB Calculus Problem 19

Let $f(x) = ax^3 + bx^2 + c$, where a, b and c are real numbers. The curve of f passes through the point $(2; 9)$.

A. Show that $8a + 4b + c = 9$.

The curve of f has a local minimum at $(1; 4)$.

B. Find two more equations in terms of a, b and c, giving your answers in a form similar to that of part A.

C. Find the value of a, the value of b and the value of c.