

IB Calculus Problem 019

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 relative minimum at $(1; 4)$.

B. Find two other 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 .