

# IB Calculus Problem 11

Consider the function  $f$  whose second derivative is  $f''(x) = 3x - 1$ .

The graph of  $f$  has a minimum point at  $A(2; 4)$  and a maximum point at  $B(-\frac{4}{3}, \frac{358}{27})$ .

- A. Use the second derivative to justify that  $B$  is a maximum.
- B. Given that  $f'(x) = \frac{3}{2}x^2 - x + p$ , show that  $p = -4$ .
- C. Find  $f(x)$ .