(a) Express $3x^2 + 24x + 50$ in the form $a(x+b)^2 + c$.   **3**

(b) Given that $f(x) = x^3 + 12x^2 + 50x - 11$, find $f'(x)$.   **2**

(c) Hence, or otherwise, explain why the curve with equation $y = f(x)$ is strictly increasing for all values of x.   **2**

Answers:

(a) $3(x + 4)^2 + 2$

(b) $3x^2 + 24x + 50$

(c) $f'(x) = 3(x + 4)^2 + 2$

        $(x + 4)^2 > 0$ for all values of x.

        So $f'(x) > 0$ for all values of x.