10 **(a)** It is given that $f(x) = 4x^3 - 4x^2 - 15x + 18$. Find the equation of the normal to the curve $y = f(x)$ at the point where $x = 1$. [5]

(b) DO NOT USE A CALCULATOR IN THIS PART OF THE QUESTION.

It is also given that $x+a$, where a is an integer, is a factor of $f(x)$. Find a and hence solve the equation $f(x) = 0$. [6]

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