6 The polynomial $\mathrm{p}(x)$ is such that $\mathrm{p}(x) = 6x^3 + ax^2 - 52x + b$, where a and b are integers. It is given that $\mathrm{p}(x)$ is divisible by $2x - 3$ and that $\mathrm{p}'(1) = 4$.

(a) Find the values of a and b. [5]

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

(b) Using your values of a and b, factorise $\mathrm{p}(x)$ fully. [3]

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