3 DO NOT USE A CALCULATOR IN THIS QUESTION.

$$p(x) = 15x^3 + 22x^2 - 15x + 2$$

(a) Find the remainder when $p(x)$ is divided by $x + 1$. [2]

(b) (i) Show that $x + 2$ is a factor of $p(x)$. [1]

(ii) Write $p(x)$ as a product of linear factors. [3]

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