7 The polynomial $\mathrm{p}(x) = ax^3 + bx^2 - 19x + 4$, where a and b are constants, has a factor $x + 4$ and is such that $2\mathrm{p}(1) = 5\mathrm{p}(0)$.

(a) Show that $\mathrm{p}(x) = (x+4)(Ax^2 + Bx + C)$, where A, B and C are integers to be found. [6]

(b) Hence factorise $\mathrm{p}(x)$. [1]

(c) Find the remainder when $\mathrm{p}'(x)$ is divided by x. [1]

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