12 A curve has equation $y = \frac{\sqrt{5x-2}}{x-3}$.

(a) Explain why the curve does not exist when $x < \frac{2}{5}$. [1]

(b) Show that $\frac{\mathrm{d}y}{\mathrm{d}x}$ can be written in the form $\frac{-(Ax+B)}{2(x-3)^2\sqrt{5x-2}}$, where A and B are positive integers. [5]

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