12 It is given that $y = \dfrac{\left(3x^2-2\right)^{\frac{2}{3}}}{x-1}$, for $x > 1$.

(a) Write $\dfrac{\mathrm{d}y}{\mathrm{d}x}$ in the form $\dfrac{\left(3x^2-2\right)^{-\frac{1}{3}}}{\left(x-1\right)^2}\left(x^2+Ax+B\right)$, where A and B are integers. [5]

(b) Find the approximate increase in y as x increases from 2 to $2+p$, where p is small. [2]