10 **(a)** Given that $y = x\sqrt{x+2}$, show that $\frac{\mathrm{d}y}{\mathrm{d}x} = \frac{Ax+B}{2\sqrt{x+2}}$, where A and B are constants. [5]

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(b) Find the exact coordinates of the stationary point of the curve $y = x\sqrt{x+2}$. [3]

(c) Determine the nature of this stationary point. [2]

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