5 The tangent to the curve $y = \frac{\sqrt{x+1}}{x}$ at the point where $x = 3$ meets the line $y = x - 16$ at the point A. Find the coordinates of A. [8]

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6 **(a)** Find $\int \frac{1}{\sqrt{3x+2}} \mathrm{d}x$. [2]

(b) Find, in terms of a, $\int_{0.5}^{a} \mathrm{e}^{(1-2x)} \mathrm{d}x$. [3]

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