2 Solve the following simultaneous equations.

$$5x - 3\ln y = 2$$
$$x + \ln y = 1$$

[4]

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3 **(a)** Find $\int\left(4x+5-\frac{1}{2x+3}\right)\mathrm{d}x$. [3]

(b) Hence find the exact value of $\int_1^3\left(4x+5-\frac{1}{2x+3}\right)\mathrm{d}x$, simplifying your answer. [3]