3 The curve with equation $y = a\sin bx + c$, where a, b and c are constants, passes through the points $(4\pi, 11)$ and $\left(-\frac{4\pi}{3}, 5\right)$. It is given that $a\sin bx + c$ has period 16π.

(a) Find the exact values of a, b and c. [4]

(b) Using your answer to **part (a)**, find the coordinates of the minimum point on the curve for $0 \leqslant x \leqslant 16\pi$. [4]

4 **(a)** Show that $\frac{1}{2x-1}+\frac{4}{(2x-1)^2}$ can be written as $\frac{2x+3}{(2x-1)^2}$. [1]

(b) Find $\int_2^5 \frac{2x+3}{(2x-1)^2}\mathrm{d}x$, giving your answer in the form $a+\ln b$, where a and b are constants. [5]

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