9 **(a)** Show that $\frac{1}{2x+1}-\frac{1}{(2x+1)^2}+\frac{4}{4x-1}=\frac{24x^2+14x+4}{(2x+1)^2(4x-1)}$. [2]

(b) Hence find $\int_{\frac{1}{2}}^{1}\frac{24x^2+14x+4}{(2x+1)^2(4x-1)}\mathrm{d}x$, giving your answer in the form $\frac{1}{2}\ln p+q$, where p and q are rational numbers. [7]

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