Let $\mathrm{f}(x) = \dfrac{36a^2}{(2a+x)(2a-x)(5a-2x)}$, where a is a positive constant.

(a) Express $\mathrm{f}(x)$ in partial fractions. [5]

(b) Hence find the exact value of $\displaystyle\int_{-a}^{a} \mathrm{f}(x)\,\mathrm{d}x$, giving your answer in the form $p\ln q + r\ln s$ where p and r are integers and q and s are prime numbers. [5]