**1.** (14 pts.) Suppose that $f$ and its derivative $f'$ are continuous functions such that $f(0) = -1$, $f(2) = 3$, $f'(0) = 3$, $f'(2) = 4$, and $\int_0^2 f(x)\,dx = 1.5$. Compute each of the following definite or indefinite integrals. Be sure to show your work.

**(a)** $\int f'(x)e^{2f(x)}\,dx$

**(b)** $\int_0^1 f(2x)\,dx$

**(c)** $\int_0^2 xf''(x)\,dx$