(1) Estimate the area under the graph of $y = x^2$ from 1 to 9 by using the four rectangles and midpoints.

(2) Use the form of the definition of the integral to evaluate the integral

$$\int_{0}^{3} (x^3 - 6x) \, dx.$$

(3) Use the Fundamental Theorem to find $\frac{dy}{dx}$ if $y = \int_{1+3x^2}^{4} \frac{1}{2 + e^t} \, dt$. 