4. (12 points) **(a)** Give the limit definition of the derivative of a function f at a point a.

(b) Use the limit definition of the derivative to find $g'(x)$ for the function $g(x) = 2x^2 - 3x$. [Be sure to show all of your work!]

(c) Use the Fundamental Theorem of Calculus to find $\int_2^4 (4x - 3)\, dx$. [Note: You must show your work to receive credit.]