Math 142, Extra Reading #1
(to be discussed in class on **2/12/14**)

Evaluate the following (purported) alternative proof of part 1 of the Fundamental Theorem of Calculus (see page 293 of Stewart): "Let F be an antiderivative of f. By part 2 of the Fundamental Theorem of the Calculus, $\int_a^b f(t)dt = F(b) - F(a)$, so $g(x) = \int_a^x f(t)\,dt = F(x) - F(a)$, whence $g'(x) = F'(x) = f(x)$ for all x in (a, b)." Do you think this is a correct proof? If there are gaps in the proof, are they fixable, or is the whole approach unworkable?