Due Thursday, 24 March:

From page 232 of **BS**: 11, 13, 15, 21, 22, 23

From page 238 of **BS**: 1, 4

A. Suppose (f_n) is a sequence of functions differentiable on $[0, 1]$ such that their derivatives (f_n') converge uniformly to g. Show that, if each f_n' is Riemann integrable on $[0, 1]$ and if $\lim_{n\to\infty} f_n(0) = a$, a real number, then the sequence (f_n) converges uniformly to a function h such that $h(0) = a$ and $h'(x) = g(x)$ for every x in $[0, 1]$.

(**Hint:** Consider $h(x) = a + \int_0^x g(t)\, dt$.)