MATH 104
Homework 9 – Due April 27, 2017
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A select number of these questions will be graded (although the *starred* questions are optional, and will not be graded). Feel free (and encouraged!) to work with your classmates on this homework and come and talk about them in office hours, but you **must** write up your own solutions. Indicate on your homework the set of people with whom you worked, if that set is non-empty.

1. Ross §32, page 280: Exercise 7
2. Ross §33, page 290: Exercise 8
3. Ross §34, pages 296-297: Exercises 1, 2a, 5, 10*
4. Ross §13, page 93: Exercises 1, 3
5. A function $f : [a, b] \to \mathbb{R}$ is said to have *bounded variation* if there exists some $K \geq 0$ such that for every partition $\mathcal{P}$ of $[a, b]$, we have

$$\sum_{k=1}^{n} |f(t_k) - f(t_{k-1})| \leq K.$$

   Prove that a function of bounded variation is integrable. *Is the converse true?