Group Work Tip #4. After the discussions had in class in relation with a handout, it is everybody's duty to carefully write down solutions to all the problems. This is a thing that I *expect* everybody to do.

Exercise 14.6. Every monotone function on $[a, b]$ is Riemann integrable.

Exercise 14.7. If $f : [a, b] \to \mathbb{R}$ is integrable and $|f(x)| \leq M$, for all $x \in [a, b]$, then

$$\left| \int_a^b f(t)\, dt \right| \leq M(b - a).$$

Exercise 14.8. An **antiderivative** of f is a continuous function F such that $F'(x) = f(x)$, for all x in the domain of f. Show that every continuous function on $f : [a, b] \to \mathbb{R}$ has an antiderivative. Moreover, if G is any antiderivative of f, then:

$$\int_a^b f(t)\, dt = G(b) - G(a).$$