MATH 311: Homework 13

Due: May 3, 2021 [This is the last day of lecture, which is a Monday.]

1. Upcoming office hours are Monday April 26 3:30-4:30, Wednesday April 28 9-10, and Monday May 3 9-10. Office hours during exam period will be posted through Canvas closer to the time.

2. We're out of new reading homework! But make sure to read through the end of Section 5.3 if you haven't yet.

3. Do exercises 5.2.2, 5.2.9 in Abbott.

4. Do exercises 5.3.2, 5.3.3, 5.3.6, 5.3.9 in Abbott.

5. Prove that $|\cos x - \cos y| \leq |x - y|$ for all x and y in $\mathbb{R}$.

6. Find the following limits if they exist.

   - $\lim_{x \to 0} \frac{1 - \cos x}{x^2}$
   - $\lim_{x \to 0} \left[\frac{1}{\sin x} - \frac{1}{x}\right]$
   - $\lim_{x \to 0} (1 + 2x)^{\frac{1}{x}}$