Part I: Read and Respond (prepare for class Friday, April 11)

Carefully read Section 4.5, **skipping the subsection on Preservation of Connected Set**, taking notes for yourself and answering the following question(s) to turn in as your Part I assignment. Review the syllabus for parts (a)–(c) that should be included in this assignment.

Reading Question(s)

1. Respond to the following description of the understanding of function in the early 1800s based on your reading in this section (from *100 Years of Mathematics* by George Temple, 1981):

   > If $x = f(t)$ is the distance x of a moving point from a fixed origin on a fixed straight line at time t, the function $f(t)$ possesses 'kinetic continuity' if the point in moving from the position $x_1 = f(t_1)$ at time t_1 to the position $x_2 = f(t_2)$ at a subsequent time t_2 passes through all the positions intermediate between x_1 and x_2.

Part II: Exercises (prepare for class for Friday, April 11)

1. Exercise 4.4.3
2. Give an explained example or prove one doesn't exist: a function $f(x)\colon \mathbb{R} \to \mathbb{R}$ that is uniformly continuous on $\mathbb{R}$.
3. Exercise 4.5.2abc

Part III: Problems (due Wednesday, April 16 at the beginning of class)

1. (P) Exercise 4.4.6
2. (I) Exercise 4.4.7