Announcements/reminders

- I will hold my usual office hour 3:00–4:00 in the afternoon on Tuesday (May 1) and Thursday (May 3).

- The comprehensive final examination takes place 8:00–10:00 on Monday morning (May 7).

- Material for the final exam: sections 0.3, 1.1–1.4, 2.1–2.5, 2.6.1, 2.6.2, 3.1–3.4, 4.1–4.4, 5.1–5.3.

- The exam has 7 problems
  (in the same style as the midterm exams).

- Please bring your own paper to the exam to work on.

Fundamental theorem of calculus

Theorem

1. If f is continuous, and $F(x) = \int_a^x f(t)\,dt$, then F is differentiable, and $F'(x) = f(x)$.

2. Suppose f is a continuous function, and F is a differentiable function such that $F'(x) = f(x)$ for all x. Then
$$\int_a^b f(t)\,dt = F(b) - F(a).$$

What are the five most fundamental concepts from this course?

0. the real numbers
1. limits
2. sequences/series
3. continuous functions
4. derivatives
5. integrals