

**My Office Hours:** M & W 2:30–4:00, Tu 2:00–3:30, & F 1:30–2:30 or by appointment. **Math Intern:** Sun: 2:00–5:00, 7:00–10pm; Mon thru Thu: 3:00–5:30 and 7:00–10:30pm in Lansing 310. Website: <http://math.hws.edu/~mitchell/Math131F15/index.html>.

### ☞ Practice

1. (a) ⓘ Read 5.3 on the Fundamental Theorem of Calculus. The Fundamental Theorem of Calculus (FTC) is, well, fundamental and makes the calculation of Riemann Integrals easy. The key is the Mean Value Theorem (MVT). Today we covered what your test calls FTC (Part 2). We will cover FTC (Part 1), next class.
- (b) Make sure you **memorize** the Fundamental Theorem of Calculus (Part 2) on page 366.
- (c) ✍ Use the FTC (Part 2) to quickly determine the answers to the following problems. Page 374: #23, 27, 33, 37–43(odd), and 57. Remember, *net area* is signed area, so area below the axis is negative. Area is always positive, so area below the axis counts as positive area (you need to change its sign).

### ☞ Due Next Class

0. Start early! Do the WeBWorK assignment Day06 (Due Monday night.)
1. Use the FTC II to evaluate the definite integral: Page 374 #24.
2. (a) Use the FTC II to evaluate the definite integral: Page 374 #42.  
(b) Use the FTC II to evaluate the definite integral (sketch region): Page 374 #28.
3. Page 374 #36, 38(multiply out first), 40, 46(divide first).
4. Evaluate  $\int_0^2 \sec^2\left(\frac{\pi x}{8}\right) dx$ .
5. Bonus Credit: Evaluate  $\int_3^6 \frac{12}{\sqrt{36-x^2}} dx$ . Give an exact answer.