Math 131 Homework Day 24

My Office Hours: M & W 12:30–2:00, Tu 2:30–4:00, & F 1:15-2:30 or by appointment. Math Intern Sun: 12–6pm; M 3-10pm; Tu 2–6, 7–1pm; W and Th: 5-10 pm in Lansing 310. Website: http://math.hws.edu/~mitchell/Math131S13/index.html.

1. **Review Exam 2.** See me if you have questions or concerns.

2. **a)** Review the yellow handout on Triangle Substitution and Section 7.3. If you have lost the handout, you can and should download it from the course website.
   **b)** Read about Partial Fractions, Section 7.4 through Example 2 on page 480.

3. **Practice On Triangles:** Page 473 #7, 15, 19, 21, 25, and 27.

**Hand In**

Triangle problems require a lot of practice. Make sure you “get it.”

0. **WeBWorK Day 24.** The last three problem in the set are optional. Here’s a chance to earn some extra credit on WeBWorK problems to make up for problems you may have missed.

1. **Do WeBWorK Day 24, Problem 1 and hand in the work. Triangle.** Normally I would suggest you do the resulting integral with a half-angle formula. But it will be easier to convert back to $x$ at the end if you use the reduction formula. See #5 at the bottom of page 6 on the Triangle Handout.

2. **Do WeBWorK Day 24, Problem 2 and hand in the work.**

3. **Do WeBWorK Day 24, Problem 3 and hand in the work.**

4. **Page 473 #38.** Same hint as in #1.

5. **Page 473 #30.** Hint: Use a triangle. One side is $\sqrt{1+x^2}$. Remember to square this when replacing the denominator. Then use a reduction formula to do the integration. Remember to convert back.

6. **$\int \frac{x^2}{\sqrt{25-x^2}} \, dx$.** Same hint as in #1.

7. **$\int \frac{x^3}{\sqrt{1-x^2}} \, dx$.** Hint: Triangle and reduction. Remember to convert back.

8. **Review (not a triangle.)** Finish with this nice problem: $\int x \cos^2 x \, dx$ (Hint: First use a half-angle identity).