

# 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. WeBWorKDay 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 WeBWorKDay 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 WeBWorKDay 24, Problem 2 and hand in the work.
3. Do WeBWorKDay 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).