Practice Problems

These problems are not to be handed in, but try them first; also try the even problems if you need more practice.

- From §6-2 (pages 370–372): 13–35 odd;
- From §7-3 (pages 436–438): 7–19 odd;
- From §7-1 (pages 417–420): 37–51 odd, 83, 85.

The answers to these should be in the back of your textbook.

Due Problems

These problems are due November 20 Tuesday.

1 Evaluate each of the following (definite or indefinite) integrals. If you integrate by substitution, show u and $\mathrm{d}u$; if you integrate by parts, show u, v, $\mathrm{d}u$, and $\mathrm{d}v$. (In any case, show at least one intermediate step for each.)

a. $\displaystyle\int \frac{x}{x^2+1}\,\mathrm{d}x$

b. $\displaystyle\int t\mathrm{e}^{4t}\,\mathrm{d}t$

c. $\displaystyle\int_1^{\mathrm{e}} 4x\ln x\,\mathrm{d}x$

d. **Extra credit:** $\displaystyle\int \mathrm{e}^{\sqrt{x}}\,\mathrm{d}x$

2 Find the area between the curves with these equations:

$$y = x^2,$$
$$y = 2x.$$

(Show at least what integral you use, as well as your final answer.)