

There are two problems from the book and one additional problem labeled A. Notice that the schedule says that these problems are due on Day 17, not Day 16 (because of the exam on Day 15).

Exercise 7.1 (use the fact that you know the areas of certain regions under the bell curve)

Exercise 7.14 (about $E(|Z|)$; I can think of two ways to do it)

In class, I mentioned that the CDF of the standard normal distribution is

$$F_Z(z) = \frac{1}{2} + \frac{1}{2} \operatorname{erf}\left(\frac{z}{\sqrt{2}}\right).$$

But I didn't tell you what erf is. Here's one definition:

$$\operatorname{erf}(z) = \frac{2}{\sqrt{\pi}} \int_0^z e^{-t^2} dt.$$

A. Verify that the derivative of F_Z is f_Z (the PDF of the standard normal distribution). If you don't know how, then consult the Calculus Review on the course web site — particularly the Miscellany.