

Homework 10

Math 262

due 5:00pm on Monday, October 30

Write your solutions to the following problems clearly and neatly. Make sure to explain your reasoning and provide mathematical details that support your answers. For a few tips on writing solutions, see [this helpful guide for mathematical writing](#).

You may write or type your solutions electronically, or write them on paper and scan or photograph them. Upload a single file containing your solutions to the [Homework 10](#) assignment on Moodle.

Book Problems

- Section 3.1 #10 (page 160)
- Section 3.2 #19, 23, 33, 36 (pages 168–171)
- Section 3.3 #39abcj, 40abe (pages 182–187)

Note: If you use technology to evaluate probabilities in your solutions, please write the function call (such as `pnorm(x, μ, σ)` or `qnorm(x, μ, σ)`) that you use to get your answer.

Additional Problem

Suppose X is a random variable with pdf

$$f(x) = \begin{cases} ax + bx^2, & 0 \leq x \leq 1 \\ 0, & \text{otherwise} \end{cases}$$

and $E(X) = \frac{1}{9}$. Either find a and b , or explain why this is not possible.