

# Math 262 Reading Guide

Section 4.4

\_\_\_\_\_ NAME

Read Section 4.4 and answer the following questions. *Hand in this worksheet at the next class.*

1. What are the definitions of the **conditional probability mass/density functions of  $Y$  given  $X = x$** ?
2. In Example 4.24, what is the conditional distribution of  $Y$ , given that  $X = 250$ ?
3. What are the definitions of the **conditional expectation** and **conditional variance** of  $Y$  given  $X = x$ ?
4. How is the conditional distribution of  $Y$  given  $X = 250$  used in Example 4.26?
5. What is the **Law of Total Expectation**?
6. What is the **Law of Total Variance**?