Math 262 Reading Guide

Section 4.2

NAME ______________________

Read Section 4.2 and answer the following questions. *Hand in this worksheet at the next class.*

1. How is **expected value** defined for jointly distributed random variables?

2. What does **linearity of expectation** mean for jointly distributed random variables?

3. If X and Y are independent and $h(X, Y) = g_1(X) \cdot g_2(Y)$, what can you say about $E[h(X, Y)]$?

4. What is the definition of the **covariance** between two random variables X and Y?

5. What is the **covariance shortcut formula**?

6. How does the **correlation coefficient** of X and Y relate to $\mathrm{Cov}(X, Y)$?