1. Chapter 7, problem 32. Use TWO different methods:

   (a) Use the formula $\text{Cov}(X, Y) = E(XY) - E(X)E(Y)$.

   (b) Define $Z_i$ to be the number of rolls that show an $i$, for $i$ going from 1 to 6. Compute $\text{Var}(Z_1 + \ldots + Z_6)$ in two different ways, and compare the answers. (Hint #1: Is $Z_1 + \ldots + Z_6$ really random? Hint #2: By symmetry, $\text{Cov}(Z_i, Z_j)$ takes on only two values as $i$ and $j$ vary: one value if $i$ and $j$ are equal, and a different value if $i$ and $j$ are distinct.)

2. Chapter 7, problem 41.

3. Chapter 7, problem 46.


6. Chapter 7, problem 60.


9. Chapter 7, theoretical exercise 22.

10. Chapter 7, theoretical exercise 35.

Each problem is worth 10 points. Additionally, you can get up to 5 bonus points for making a good estimate of your raw score.