**HW4 (EAS 595-Fall 2019)**

**Due: Nov 5th 2019 at 11:59 PM**

**Problems from the book:**

**Section 4.1:** Problem 2, 5, 7

**Section 4.2, 4.3, 4.4:** Problem 17, 24, 29

**Extra Problems:**

1. Let X and Y be independent uniform random variable defined on (0,1). Find the PDF of Z = X-Y2
2. Let X and Y be independent random variable with the following PDF:

What is the PDF of Z=X+Y?

1. Consider the random variable X in the previous example.
   1. Find the moment generating function for *X*
   2. Use the moment generating function to find the variance of *X*