Worksheet 11

MATH 16B GSI:TAO SU TU 11/21/2017

1. Find $\mathrm{E}(X), \mathrm{Var}(X)$ of the discrete random variable X given by the following probability table.

Outcome	0	1
Probability	0.2	0.8

2. Find the value for k such that $f(x) = kx, 1 \leq x \leq 3$ is a probability density function on the specified interval.

3. The cumulative distribution function for a random variable X is given by $F(x) = \frac{1}{2}\sqrt{x-1}, 1 \leq x \leq 5$. Find the corresponding density function.

4. Compute the cumulative distribution function corresponding to the density function $f(x) = \frac{1}{5}, 2 \leq x \leq 7$. Find the expected value and variance.

5. A random variable X has a density function $f(x) = \frac{1}{3}, 0 \leq x \leq 3$. Find b such that $\mathrm{P}(0 \leq X \leq b) = 0.6$.