

Warm-up Problems - April 12, 2006

1. For the following functions:

- Check that the functions are PDF's.
- Find the CDF.
- Using the CDF, find $P(3/4 < X < 11/4)$.

(a)

$$f(x) = \begin{cases} 0 & \text{if } x < 0 \\ 1 & \text{if } 0 \leq x \leq 1 \\ 0 & \text{if } x > 1 \end{cases}$$

(b)

$$f(x) = \begin{cases} 0 & \text{if } x < 2 \\ 1 & \text{if } 2 \leq x \leq 3 \\ 0 & \text{if } x > 3 \end{cases}$$

Lecture Problems

2. Find the mean, or expected value of each of the PDF's below.

(a)

$$f(x) = \begin{cases} 0 & \text{if } x < 2 \\ 1 & \text{if } 2 \leq x \leq 3 \\ 0 & \text{if } x > 3 \end{cases}$$

(b)

$$f(x) = \begin{cases} 0 & \text{if } x < 0 \\ \frac{3}{2}(1 - x^2) & \text{if } 0 \leq x \leq 1 \\ 0 & \text{if } x > 1 \end{cases}$$