ASSIGNMENT 2

Due February 17, 2004 (before start of class)

Problem 2

Suppose X is a continuous random variable whose values x obey the probability density function

$$f(x) = \begin{cases} 0 & x \leq 0 \\ \dfrac{9x^2}{4} & 0 \leq x \leq 1 \\ \dfrac{1}{2} - \dfrac{x}{6} & 1 \leq x \leq 2 \\ 0 & x \geq 2 \end{cases}$$

1. Find the cumulative probability distribution function $F(x)$.

2. Calculate the expected value $E(X)$.

3. Calculate the variance $V(X)$.