

Math 026L.01 Spring 2000
Quiz #7

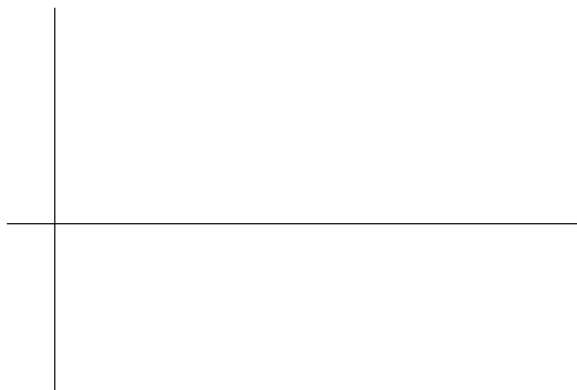
Name: _____

You have 20 minutes to complete this quiz which is worth 20 points. Calculators are permitted, but no other aids are allowed. Show all work neatly and in order, and clearly indicate your final answers. Answers must be justified whenever possible in order to earn full credit. When you do use your calculator, sketch all relevant graphs and write down all relevant mathematics.

1. (20 points) Consider the function $f(x) = cxe^{-2x}$ defined for $0 \leq x < \infty$.

a. (5 pts) Find the value of c so that $f(x)$ is a density function.

b. (3 pts) Sketch the graph of $f(x)$ on the axes below. (Be sure to label your axes.)



c. (4 pts) Compute the distribution function $F(x)$ for f .

d. (3 pts) Sketch the graph $F(x)$ on the axes below. (*Be sure to label your axes.*)



e. (5 pts) Compute $\int_0^{\infty} x f(x) dx$. What is this value called?