Math 10A with Professor Stankova
Quiz 10; Wednesday, 11/1/2017
Section #106; Time: 10 AM
GSI name: Roy Zhao   **Name:** _____

Circle True or False or leave blank. (1 point for correct answer, -1 for incorrect answer, 0 if left blank)

1. True   False   It is possible to determine the equation for the PDF, given the equation for the CDF.

2. True   False   Suppose that $f(x) = x$ for $-0.5 \leq x \leq 1.5$ and 0 everywhere else. Since $\int_{-0.5}^{1.5} x\,dx = 1$ (you can assume the integral is correct), then f is a PDF.

Show your work and justify your answers. Please circle or box your final answer.

3. (10 points)   (a) (5 points) Suppose that $f(x) = Cxe^{-x^2}$ for $x \geq 0$ and $f(x) = 0$ for $x < 0$ for some constant C. If f is a PDF, then find C.

   (b) (2 points) Find the CDF of f from above. (Hint: the CDF will be piecewise)

   (c) (3 points) Find the probability that a randomly picked value from the PDF f from above is between 0 and 1.