

Math 10A with Professor Stankova

Quiz 10; Wednesday, 11/1/2017

Section #107; Time: 11 AM

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Name: _____

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

1. True False The CDF is the derivative of the PDF.
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 1 and 2.