

Math 10B with Professor Stankova

Quiz 10; Tuesday, 4/9/2019

Section #203; Time: 11 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 Shifting the graph of a PDF to the left or right changes the standard deviation.
2. True False Chebyshev's inequality can help us when $0 < k < 1$.

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

3. (10 points) (a) (7 points) Calculate the standard deviation of $f(x) = \begin{cases} 3x^{-4} & x \leq -1 \\ 0 & x > -1 \end{cases}$
(do not use any formulas).

- (b) (3 points) Let f be a PDF with mean 0 and standard deviation 1. For what value of a can we say that $P(-a \leq X \leq a) \geq \frac{8}{9}$?