MATH 10B
Section 205
GSI: Theo McKenzie

Quiz 10

Student:
SID:
Tue 4/9/19

True/False - No explanation needed. (For each: 1 point if correct, 0 points if not answered, -1 points if incorrect)

1. The Pareto distribution $f(x) = \frac{a-1}{x^a}$ for $x \geq 1$ fails to have a well defined μ when $a < 2$. True/False

2. The second form of Ch.I. $P(|X - \mu| \geq r) \leq \frac{\text{Var}(X)}{r^2}$ can be obtained by algebraically manipulating the first form of Ch.I. $P(\mu - k\sigma < X < \mu + k\sigma) \geq 1 - \frac{1}{k^2}$, *without* invoking again integrals. True/False

Problems - Needs justification.

1. A basketball factory produces an average of 1000 basketballs a day with a variance of 100. Give a lower bound on the probability that on a given day, the factory produces between 950 and 1050 basketballs.