CSE 312: Foundations of Computing II

QuickCheck: Continuous RV's and Central Limit Theorem (due Thursday, May 17)

Name:

0. Paw-some Experiment

Yael spends a lot of her free time hanging out at the Seattle Meowtropolitan cat cafe and decided to make an experiment to find the weights of all of these cats. She found that their weights are normally distributed with a mean of 8.5 lbs and a standard deviation of 2.3 lbs. Let $X \sim$ Normal$(8.5, 2.3^2)$ be the random variable for this experiment

(a) What is the probability that one randomly selected cat will weigh more than 9.7 lbs?

(b) What is the probability that four randomly-selected cats will have a mean weight of more than 9.7 lbs?

(c) Yael just bought a new hammock for her cat Domino. However, the tag on the hammock says that the maximum allowable weight is 38.8 lbs. If three of Domino's cat friends come over to share the hammock with him, what is the probability they will exceed the maximum allowable weight?