Your Name: $\qquad$

Names of people you worked with: $\qquad$

1. Do you prefer the mountains or the beach?
2. What is your group status for the semester project? For example: you have a group set, you think you might have people to work with, you don't have ideas for who to work with, something else?
3. Consider the Ethan Allen example. Recall that we are assuming that the CDC information on weights is a reasonably accurate description of the people who board the Ethan Allen ( $\mu=167 \mathrm{lbs}$ and $\sigma=35 \mathrm{lbs}$ ).

Roughly sketch three curves. For each curve, indicate at least three values (numbers) on the x-axis.
(a) A histogram describing the weights of 100 randomly sampled individuals.
(b) A histogram describing the sample means of 5000 difference samples, each sample of 100 random people.
(c) A histogram describing the T-score of 5000 different samples (from a population of $\mu=167 \mathrm{lbs}$ ), each sample of 100 random people.

## Solution:

3 (a) Likely the distribution is skewed right. The x-axis should have weights (i.e., be in lbs) you would expect to see in the population.


3 (b) The sampling distribution of the sample mean should be centered at 167 lbs with a standard deviation of 3.5 lbs . Again, the units on the x-axis are lbs. Pay attention to how much more narrow the sampling distribution of the mean is as compared to the population distribution or the data distribution.


3 (c) The sampling distribution of the T score should be centered at 0 with a spread that is only slightly wider than a $\mathrm{N}(0,1)$. Notice that the x -axis is no longer in units of "lbs". Instead, the x -axis is scaled, akin to using Z scores.


