Prob & Stats	Name:	
Random Sampling - Senators	Date:	Period:

Each team has a list of the 100 US senators. They each have an ID number, 01 to 100.
Use your calculators to select a random sample of 10 senators from the list. **randInt(1,100,10)**

Fill in these tables.

ID #	Name	State	Party	Years of Service	Gender

In your sample:

Num. Males			Num. Democrats	
Num. Females			Num. Republicans	
Proportion of Democrats			Num Independents	

Years of Service	Mean	S.D.	Min	Q1	Median	Q3	Max

Construct a dot plot of Years of Service for your sample.
Overlay a box plot over the dot plot.
Mark the sample mean and ± 1 S.D. on the dot plot.
Describe the distribution.

For the population give:
mean Yrs of Service: std dev: Prop. of Demos: Prop. of females:

What is your home state?   Is there a senator from your home state in your sample?

Does your sample proportion of Females match the population proportion? Y / N

Does your sample proportion of Demos match the population proportion ? Y / N

Does your sample mean Years of Service match the population mean? Y / N

If you answered NO to any of these, does it mean your sample is biased? Explain.

Now collect the data from nine others to create 10 samples of size 10. Fill this tables.

Sample #	1	2	3	4	5	6	7	8	9	10
Proportion of Demos										
Mean Years of Service										

What is the mean of the sample proportion of Democrats?
Is it the same as your original sample?   Y / N

What is the mean of the sample mean Years of Service?
Is it the same as your original sample?   Y / N
Is this a meaningful comparison? Explain.

What is the s.d. of the sample mean Years of Service?
Is it the same as your original sample?   Y / N
Is this a meaningful comparison? Explain.

Construct a dot plot of your sample mean Years of Service.

Overlay a box plot over the dot plot.

Describe the distribution.

Mark on your graph:
      a) the population mean Years of Service;
      b) the mean of your sample means;
      c) and the interval of ± 1 s.d. of your sample means.

Comparing the Years of Service of your single sample of 10 with the 10 samples of 10:
- Which has more variability (the single sample versus 10 sample of 10)? Why?

- Which method gets closer to the truth about the population? Why?

Which is going to give a better model: 10 samples of size 40 or 40 samples of size 10?
Explain.