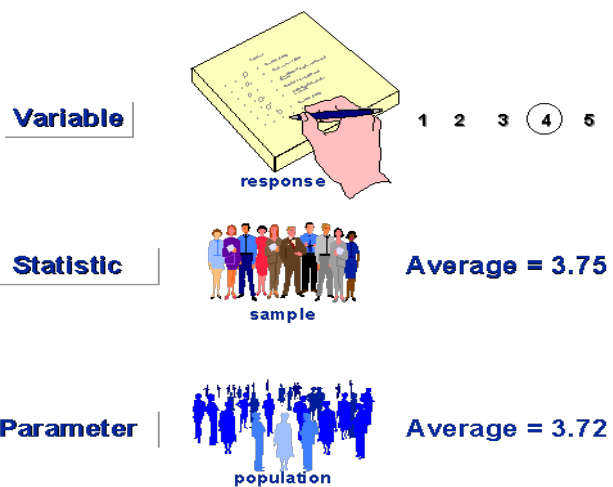


Collect 25 to 30 pennies

Sampling

Describing a population using sampling

Parameters/Statistic/Variables



On an anniversary of Elvis's alleged death, a record company conducted a call in survey. Listeners of radio stations across the country were asked to call a 900-number (\$2.50 per call!) to voice an opinion concerning whether or not Elvis was really dead.

The result was that 56% of callers felt the Elvis was still alive.

Waaaay back in 1936 a polling company mailed a survey to people they had selected out of the phone book. They incorrectly predicted the outcome of the presidential elections.

More recently, surveys have been conducted over the web, PDAs, Facebook, cell phones, twitter, and Google Glass.

Are there problems with these survey methods?

What are the objectives of taking surveys?

Common methods of sampling

1. systematic
2. stratified
3. cluster
4. random

Your turn.

You need to choose 10 people from a list.
How are you going to do this?

Assignment time.

Grading Rubric: Random Sampling - Senators

<u>Dot Plot 1</u>		<u>Dot Plot 2</u>	
1 Sample of 10 Dot Plot	/5	10 samples of 10	/5
Graphing conventions	/5	Graphing conventions	/5
Description: Center/Spread/Shape	/6	Description: Center/Spread/Shape	/6
Questions "if you answered NO..."	/5		
Summary Question 1 Mark on graph...	/3		
Summary Question 2 comparing Years of Service...	/5		
Summary Question 3 Which is going to give a better model...	/5	total:	/50

Population Parameters

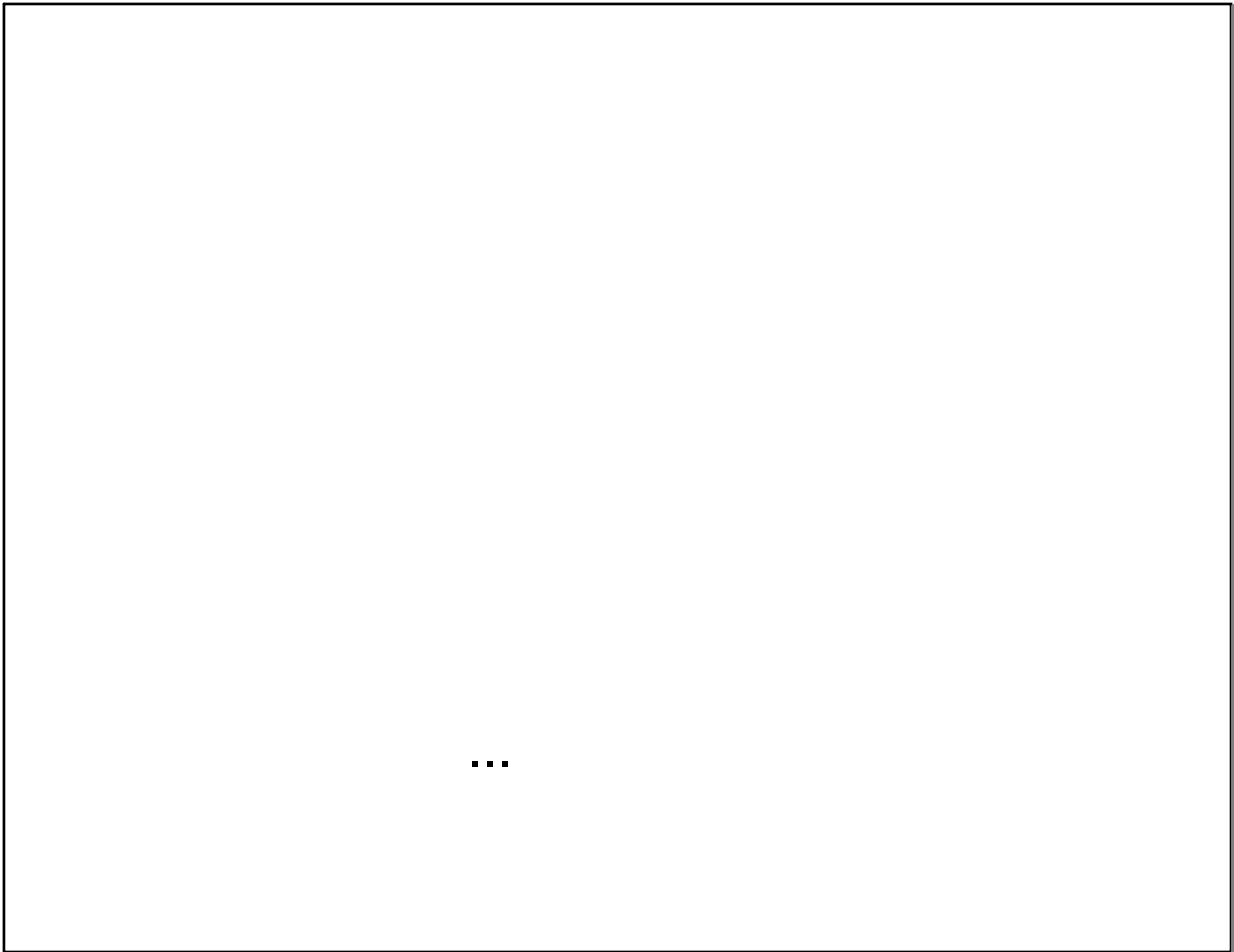
Years of service: $\mu =$ yrs

$\sigma =$ yrs

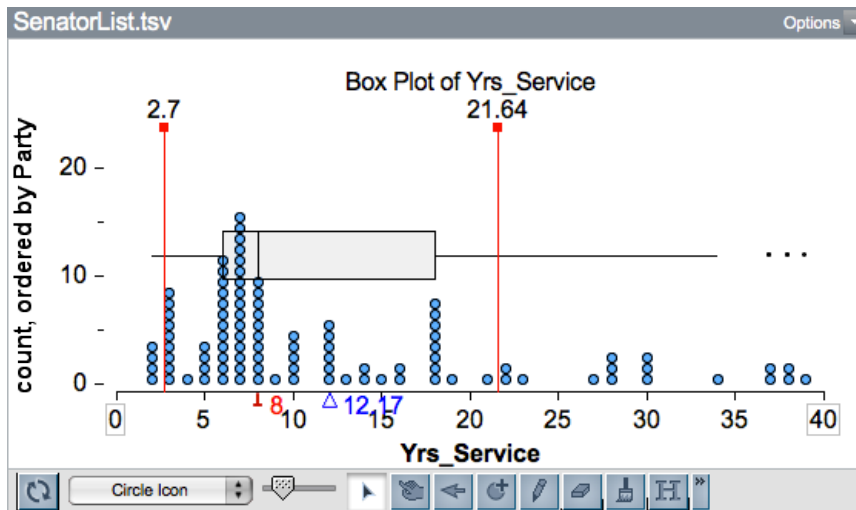
Proportion of males: $p =$

Proportion of Democrats: $p =$

...



Random Sampling Debrief



Typical answer for a single sample of 10

Years of Service mean = 10.55 and s.d. = 7.68

What is your home state?

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

Does the proportion of Males to Females of your sample match the population proportion?

Does the proportion of Democrats to Republicans of your sample match the population proportion ?

Does the mean Years of Service of your sample match the population mean?

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

Typical answers for 10 samples of size 10.

Years of Service mean = 11.2 and s.d. = 3.03

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 is method gets closer to the truth about the population? Why?

If you were to take 10 samples of size 40, would this cause your statistics to be closer to the truth about the population? Explain.

