


Census and Sampling Video

 <http://www.learner.org/courses/againstallodds/unitpages/unit16.html>

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The entire group of objects or individuals about which information is wanted is called the population.

A census is an attempt to gather information about every individual in a population.

A **sample** is a part of the population that is actually examined in order to represent the whole.

A simple random sample of size n consists of n individuals from the population chosen in such a way that every set of n individuals has an equal chance of being the selected sample.

Sampling bias occurs when a sample is collected in such a way that some individuals in the population are less likely to be included in the sample than others. Because of this, information gathered from the sample will be slanted toward those who are more likely to be part of the sample.

 https://www.census.gov/popclock/?intcmp=w_200x402

Use a search engine (such as Google) to find the 2010 (or most recent) Census homepage. Then answer the following questions.

1. What is the current U.S. population? (Note this number will change. Check back at the end of the assignment to see how much the population has changed during the time you worked on this assignment.)

328,503,567

2. Click the Population Finder. Select your state from the scroll-down menu to access the 2010 (or most recent) Demographic Profile for your state.

a. What was the population of your state in ~~2010~~²⁰¹⁸?

19,542,209

b. What percentage of your state's population was male? Female?

48.6%

51.4%

c. Which was higher for your state, the percent under 18 or the percent 65 or over? (Give the percentages.)

20.9%

15.9%

Homework:

Unit 16: Census and Sampling

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- * For #1, number the people ALPHABETICALLY (go across). Start on row 5 on the Random Number Table we used in class.

b) only do 1 more section of people.

REVIEW QUESTIONS

1. The students listed below are enrolled in an elementary French course. Students are assigned to small conversation sections at random.

Arnold	Ashford	Bartkowski	Barrett
Beerbohm	Burns	Campbell	Chang
Colon	Deneuve	Dodgington	Drummond
Elsevier	Erschine	Garcia	Fernandez
Flury	Hardy	Holmes	Hyde
Jones	Juarez	Kempthorne	Levine
Martinez	Moore	Munroe	Neale
Nguyen	Oakley	Orsini	Perlman
Poe	Prizzi	Putnam	Quincy
Randall	Rodriguez	Rostenkowski	Rowley
Schiller	Scott	Smith	Stevenson
Swokowski	Taylor	Vuong	Ward

a. Choose a simple random sample of eight of these students to form Section 01.

Explain how you obtained the names for the first section.

b. Assign the remaining students at random to the Sections 02, ~~03, 04, 05 and 06.~~

Explain the process you used to make the assignments.

2. Identify the population and the sample in each of the following situations.

- a. A professor asks a sample of students during their college orientation whether they planned to take an online course their first semester at college.
- b. A physical therapist is investigating a new exercise regimen to see if it could improve the function of arthritic knees. She chooses 10 of her patients and has them follow the new exercise regimen.

3. A university president wishes to know what types of activities and jobs graduates of the university are doing 5 years after graduation. You have been asked to deliver this information to the president.

- a. What is the population of interest?
- b. State reasons for taking a sample rather than a census to obtain information for the president.

4. Suppose you want to know whether or not a population supports a certain measure. You have one month to find out.
 - a. List some of the pros and cons for getting this information by conducting a census.
 - b. List some of the pros and cons for getting information about a population by taking a sample.

