

JEOPARDY

Unit 1 Review
Statistical Reasoning
Fall 2018



Vocabulary	Populations and Samples	Variables	Studies	Mystery
<u>\$100</u>	<u>\$100</u>	<u>\$100</u>	<u>\$100</u>	<u>\$100</u>
<u>\$200</u>	<u>\$200</u>	<u>\$200</u>	<u>\$200</u>	<u>\$200</u>
<u>\$300</u>	<u>\$300</u>	<u>\$300</u>	<u>\$300</u>	<u>\$300</u>
<u>\$400</u>	<u>\$400</u>	<u>\$400</u>	<u>\$400</u>	<u>\$400</u>
<u>\$500</u>	<u>\$500</u>	<u>\$500</u>	<u>\$500</u>	<u>\$500</u>



Vocabulary**\$100**

A _____ collects data from every individual in a population.

**Vocabulary****\$100**

Census



Vocabulary**\$200**

What is the difference between quantitative variables and categorical variables?

**Vocabulary****\$200**

Quantitative variables take numerical values while categorical variables do not.



Vocabulary**\$300**

What type of study deals with changing behaviors?

**Vocabulary****\$300**

Experiments



Vocabulary**\$400**

The entire group of individuals about which we want information is known as the what?

**Vocabulary****\$400**

Population



Vocabulary**\$500**

The part of the population that we actually collect information from is known as what?

**Vocabulary****\$500**

The sample



Populations and Samples \$100

A survey will be given to 100 students randomly selected from the freshmen class at Lincoln High School. What is the sample?



Populations and Samples \$100

The 100 selected students.



Populations and Samples \$200

What is the population in the scenario described below?

To determine how many cats have blue eyes, the eye colors of 10 cats at each of 10 animal shelters in different states are recorded.



Populations and Samples \$200

Cats



Populations and Samples \$300

A survey will be given to 100 students randomly selected from the freshmen class at Lincoln High School. What is the population?



Populations and Samples \$300

All freshmen at Lincoln High School



Populations and Samples \$400

A toy store owner tracking how much kids spend each month on toys.

What would the population of this scenario be?



Populations and Samples \$400

All the kids who buy toys



Populations and Samples \$500

A manufacturer's quality-control department wants to ensure that 100-watt light bulbs produced by the manufacturer are meeting predetermined standards for how long they last before burning out. They randomly select 50 100-watt lightbulbs and leave them on until they burn on, recording how long they last (in hours).

What is the population in this study?



Populations and Samples \$500

The 100-watt lightbulbs from this manufacturer



Variables

\$100

The flavor soft drink ordered by each customer at Chick-fil-A is an example of what kind of variable?



Variables

\$100

Categorical



Variables**\$200**

What is the variable is described in the scenario described below?

To determine how many cats have blue eyes, the eye colors of 10 cars at each of 10 animal shelters in different states are recorded.

**Variables****\$200**

Eye color of cats



Variables

\$300

How many variables in the table below are quantitative?

	Gender (M/F)	Age	Weight (lbs.)	Height (in.)	Smoking (1=No, 2=Yes)	Race
Patient #1	M	59	175	69	1	White
Patient #2	F	67	140	62	2	Black
Patient #3	F	73	155	59	1	Asian
.
.
.
.
.
Patient #75	M	48	90	72	1	White



Variables

\$300

Four



Variables

\$400

A survey asks adults about their gender, marital status, number of children, annual salary, and age. Which of these are categorical?



Variables

\$400

Gender and Marital Status



Variables**\$500**

A survey asks people about the month they were born in. How would people answer with quantitative data? How would people answer with categorical data?

**Variables****\$500**

Quantitative: Answering with the month's number (ie, January is 1, February is 2, etc.)

Categorical: Answering with the month (January, February, etc.)



Studies**\$100**

To find out whether car accidents are more likely on rainy days, a researcher records the weather conditions during 50 randomly selected accidents for the past year. Is this an example of an experiment or observational study?

**Studies****\$100**

Observational Study



Studies

\$200

An educational software company wants to compare the effectiveness of its computer animation for teaching biology with that of a textbook presentation. The company gives a biology pretest to each of a group of high school juniors, and then divides them into two groups. One group uses the animation, and the other studies the test. The company retests all students and compares the increase in biology test scores in the two groups.

Is this an example of an experiment or observational study?



Studies

\$200

Experiment



Studies**\$300**

What is the treatment in the following experiment?

Researchers have 100 subjects with high cholesterol take fish oil pills daily for two months. They monitor the cholesterol of the subjects during that time.

**Studies****\$300**

Taking fish oil pills



Studies**\$400**

Researchers measure the cholesterol of 50 subjects who report that they eat fish regularly and 50 subjects who report that they do not eat fish regularly. Is this an example of an experiment or observational study?

**Studies****\$400**

Observational Study



Studies

\$500

Consider the following experiment: Find 100 students and randomly split them into two groups. One group walks to school and the other group does not.

What is the control group? What is the treatment group?



Studies

\$500

Treatment Group: the group that walks to school

Control Group: the group that doesn't walk to school



Mystery

\$100

Is an observational study or an experiment best used to study cause and effect?



Mystery

\$100

Experiment



Mystery**\$200**

A scientist measures the height of 20 birds' nests and counts the number of eggs to see if there is a relationship. Is this an experiment or an observational study?

**Mystery****\$200**

Observational Study



Mystery**\$300**

What are the individuals represented in the table below?

Course	Professional Development ²	Textbooks	Supplemental Reading	Material & Equipment ³	Total
Arts	\$400-1,400	\$1,750-3,000	\$0	\$200-2,000	\$2,350-6,400
English	\$400-1,400	\$0	\$1,500- \$1,800	\$0	\$1,900-3,200
History	\$400-1,400	\$1,750-2,400	\$1,250- \$1,500	\$0	\$3,400-5,300
Math & Comp Science	\$400-1,400	\$1,500-1,800	\$0	\$2,500-3,000	\$4,400-6,200
Sciences	\$400-1,400	\$2000-3,600	\$0	\$4,500-6,050	\$6,900-11,050

Mystery**\$300**

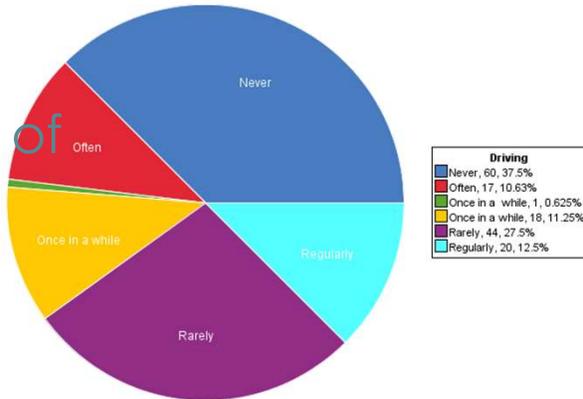
The courses – Art, English, History, Math & Computer Science, and Sciences



Mystery

\$400

The following pie chart shows the frequency at which people aged 40-50 text and drive.



What would be a reasonable question interest in this case?

Mystery

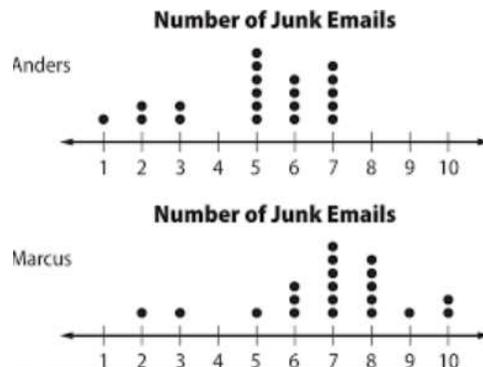
\$400

How often do adults between the age of 40 and 50 text and drive?



Mystery**\$500**

What conclusion can you draw from the dot plots below?

**Mystery****\$500**

Marcus receives the most junk mail.

