

# Test 1 Study Guide

Name: \_\_\_\_\_

*Key*

Test is on:

## Know your vocabulary!

- |                         |                          |                                  |
|-------------------------|--------------------------|----------------------------------|
| 1) Statistics           | 13) Experiment           | 25) Non response                 |
| 2) Individuals          | 14) Simple random sample | 26) Response variable            |
| 3) Variables            | 15) Convenience          | 27) Explanatory variable         |
| 4) Categorical          | 16) Voluntary response   | 28) Lurking variable             |
| 5) Quantitative         | 17) Cluster              | 29) Subjects                     |
| 6) Population           | 18) Stratified           | 30) Treatment                    |
| 7) Sample               | 19) Systematic           | 31) Control                      |
| 8) Statistic            | 20) Bias                 | 32) Placebo                      |
| 9) Parameter            | 21) Unbiased             | 33) Blinding                     |
| 10) Observational Study | 22) Under-coverage       | 34) Block design                 |
| 11) Sample survey       | 23) Processing errors    | 35) Randomized comparative       |
| 12) Census              | 24) Response errors      | 36) Random digits (from project) |

**The bullet points below are summarized in the following pages. Make sure you understand each before you take the test...**

- Compare a population to a sample
- What is the difference between categorical and quantitative variables—be able to come up with an example of each
- Compare the four ways to collect data. State a distinguishing characteristic of each.
- State the 6 sampling techniques we discussed. Describe each technique in your own words.
- State which of the 6 sampling techniques are biased or unbiased.
- State the 5 sampling errors we discussed. Describe each technique in your own words.
- Compare the response variable and explanatory variables—be able to come up with an example of each
- Know the basic components of experimentation—*lurking variables, subjects, treatments, control, placebo, blinding...etc.*
- Know the difference between a randomized comparative design and a block design in experimentation.
- Be familiar with how to select an SRS using Table B—random digits (based on project)

# Population, samples, parameters, and statistics

Fill in the blanks with the following terms:

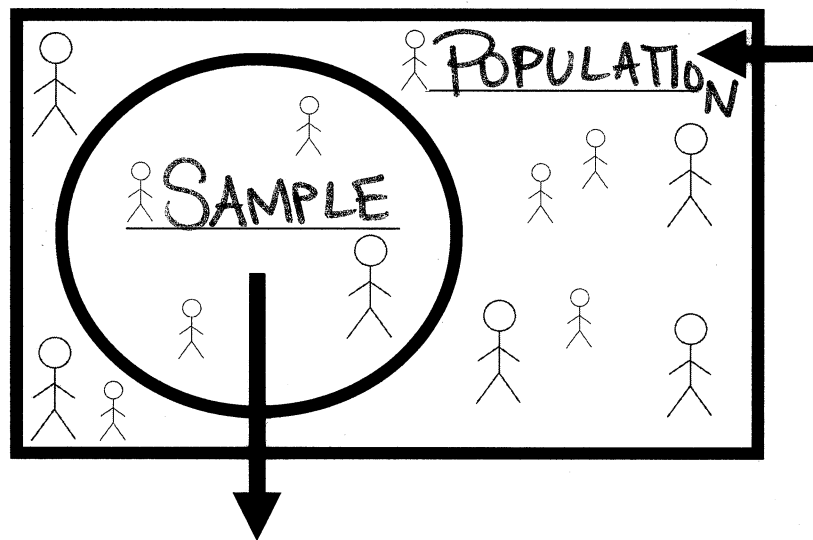
**POPULATION**

**SAMPLE**

**STATISTIC**

**CONCLUSION**

**PARAMETER**



To make a CONCLUSION about the population's PARAMETER

Obtain a STATISTIC

## Variables describe Individuals

What is the difference between categorical and quantitative variables—be able to come up with three example of each.

**Categorical Variable**

**Quantitative Variable**

## Four Ways to Collect Data

Compare the four ways to collect data. State a distinguishing characteristic of each.

**Observational Study**

**census**

**Experiment**

**Sample Survey**

# Sampling Techniques

State the 6 sampling techniques we discussed. Describe each technique in your own words. State which of the 6 sampling techniques are biased or unbiased.

**Convenience Sampling**

**Cluster Sampling**

**Voluntary Response Sampling**

**Stratified Sampling**

**Systematic Sampling**

**Simple Random Sampling**

# Sampling Errors

State the 5 sampling errors we discussed. Describe each technique in your own words.

**UNDERCOVERAGE**

**PROCESSING ERROR**

**RESPONSE ERROR**

**NONRESPONSE**

**BIASED SAMPLE METHOD**

# Two Types of Experimentation

Know the difference between a randomized comparative design and a block design in experimentation.

**Randomized Comparative Design VS. Block Design**

# Basic Experimentation Terms

Summarize these in your own words. Create examples of each.

<b>Subjects</b>	<b>Treatment</b>	<b>Control Group</b>	<b>Lurking Variable</b>
<b>Placebo</b>	<b>Blinding</b>	<b>Response Variable</b>	<b>Explanatory Variable</b>

## Random Digits

Be familiar with how to select an SRS using Table B—random digits (based on project)

**TABLE B**

Random digits

Line								
101	19223	95034	05756	28713	96409	12531	42544	82853
102	73676	47150	99400	01927	27754	42648	82425	36290
103	45467	71709	77558	00095	32863	29485	82226	90056
104	52711	38889	93074	60227	40011	85848	48767	52573
105	95592	94007	69971	91481	60779	53791	17297	59335
106	68417	35013	15529	72765	85089	57067	50211	47487
107	82739	57890	20807	47511	81676	55300	94383	14893
108	60941	72024	17868	24943	61790	40956	87964	18883
109	36009	19365	15412	39638	85453	46816	83485	41979
110	34018	48789	18338	24697	39364	42006	76688	08708

Choose the three students for a group. Each student is assigned a digit (below). Use LINE 110 to select the three students that will form the committee

1 Lucas    2 Caroline    3 Mat    4 Joe    5 Mike    6 John    7 Lisa

1. What are the names of the THREE selected students? Mat, Joe, Lisa

In Science class a group of five students needs to be chosen. Each student is assigned a digit (below). Use LINE 102 to select the five students that will form the committee

01 Lucas    02 Caroline    03 Mat    04 Joe    05 Mike    06 John    07 Lisa  
08 Nan    09 Stephen    10 Susan    11 Robert    12 Jim    13 Bill    14 Phyllis

2. What are the names of the FIVE selected students? Lucas, Caroline, Lisa, Stephen, Bill

Now Use LINE 108 to select a new group of five students that will form the committee.

01 Lucas    02 Caroline    03 Mat    04 Joe    05 Mike    06 John    07 Lisa  
08 Nan    09 Stephen    10 Susan    11 Robert    12 Jim    13 Bill    14 Phyllis

3. What are the names of the FIVE selected students? John, Lisa, Nan, Stephen