

MBF 3CI 3.2 Warm-up

Date: \_\_\_\_\_

Warm-up: Sampling Techniques**You do NOT need to copy these down.**

You have learned about several sampling techniques: Given the following situations, state which sampling technique is used:

1. Simple random
2. Stratified random
3. Cluster
4. Voluntary response
5. Convenience
6. Systematic random

- a) A survey of the speed of cars on a particular section of a street (section is not randomly chosen), to determine the average speed of drivers.

 **Convenience**

- b) Names of family members at a reunion are placed on pieces of paper 3 cm by 3 cm. The great grandfather randomly draws names for gifts from a box that contains these pieces.

 **Simple random**

- c) A survey of 120 students at HHSS is conducted. At HHSS (student population size of 1100), the student body is distributed as:  
 Grade 9: 30%  
 Grade 10: 25%  
 Grade 11: 25%  
 Grade 12: 20%  
 The sample is created so that there are 36 grade 9s, 30 grade 10s, 30 grade 11s and the rest grade 12s.

 **Stratified**

- d) After randomly choosing an apartment to begin with, every third apartment on one floor is chosen.

 **Systematic**

Before we begin, are there any questions from last day's work?

## Today's Learning Goal(s):

By the end of the class, I will be able to:

- a) Understand the difference between primary and secondary data
- b) Understand what bias is.
- c) Distinguish between different types of bias.

From yesterday's homework p.108 #9

	9	10	11	12
9	307			
10	242			
11	230			
12	212			
<u>Total</u>	<u>991</u>			
	$\frac{307}{991} \times 100$	$\frac{242}{991} \times 100$	$\frac{230}{991} \times 100$	$\frac{212}{991} \times 100$
	$\approx 30.9$	$\approx 24.4$	$\approx 23.2$	$\approx 21.3$
	$\approx 31$	$\approx 24$	$\approx 23$	$\approx 21$
	30	25	25	20

MBF3CI

Date: Oct. 11/16



Define: Primary vs. Secondary Data  please have someone explain the difference  
 Refer to text p.111

### 3.2 Bias in Data




**Bias** is any factor that favours certain outcomes or responses in a statistical study.



A survey with bias *may* have incorrect results.

The methods used for choosing the sample and collecting the data must be free from bias.

Bias	Characteristics	Example(s)
<p><b>Sampling Bias</b></p>	<p>The sample does not reflect the characteristic(s) of the population based on the sampling technique chosen.</p>	<p> omitted certain groups from the sample</p> <p> incorrectly calculated the number to be sampled</p>

<b>Non-Response Bias</b>	Member(s) are under-represented in a sample because they chose not to participate.	👉 too few from 1 or more strata gave responses
--------------------------	------------------------------------------------------------------------------------	------------------------------------------------

Bias	Characteristics	Example(s)
<p><b>Measurement Bias</b></p>	<p>The data has not been collected properly. This is due to human error and/or the wording of survey questions is poor.</p> <p>Questions that are worded poorly tend to be either <b>loaded</b> and/or <b>leading</b>.</p>	<p><i>Original Wording of Parents' Night Question</i></p> <p> <i>Do you make sure your teen eats breakfast daily?</i></p> <p><i>Modified Wording of Parents' Night Question</i></p> <p> Eating breakfast results in better school achievement.</p> <p>Do you make sure your teen eats breakfast daily?</p> <p> The statement of fact "leads" the responses.</p>

<b>Response Bias</b>	Participants in a survey give false answers on purpose.	 Do you ever drive above the speed limit?  Would you ever cheat on your partner?
<b>Review the learning goals. Were we successful today?</b> <b>Today's entertainment: pp. 114-117 #1 to 5, 7 to 14</b> <b>Note: ** Answers to 3 a,d are incorrect</b> <b>**they should be MEASUREMENT BIAS!!</b> <b>Be ready for the Quiz next class!</b>		