Introduction to Statistics Class Work

🕊 **Objective:** You will be able to…   understand statistics as a process for making inferences, and recognize the purposes and differences among survey types. Today you will be able to distinguish between types of data and statistics.

☆ **Data**

is _____ coming from observations, surveys, etc.

☆ **Statistics**

is the _____collecting, organizing, analyzing, and interpreting _____ to make decisions.

*Complete the analogy:

Data is to statistics as <u>peaches / peach-picking</u> <u>is / are</u> to

<u>peaches / peach-picking</u> because…

✶**Data Can be Collected from the Following Types of Sets…**

- ◉ **Population**: The collection of outcomes, responses, etc. from _____ individuals/groups/items of interest

   The numerical values used to described populations are called _____ (remember "p")

- ◉ **Sample**: _____

   The numerical values used to describe samples are called _____ (remember "s")
   [Yes, this word has two meanings as a noun.]

***Example:** At Hillsdale Farms, the number of hours each horse is ridden and the number of hours each horse spends in the field outside is recorded daily. This study ensures that 93% of the horses are receiving enough exercise. Some horses are used for lessons, so the surveyor also designs an in-depth collection of data to observe the average weekly number of hours each lesson horse is ridden, to ensure these horses are not being overworked. The results show that the average amount of horses each horse is ridden per week is 8 hours.

The *population* is…

The *parameter(s)* is/are…

The *sample* is…

The *statistic(s)* is/are…

✎ Determine whether each situation in #1-4 represents a population, a sample, a parameter, or a statistic. Support your reasoning.

1. A survey of 100 sophomores at Cranford High School.

2. The average annual salary of every employee in a certain company is $58,000.

3. The weight of every elephant at an elephant sanctuary is recorded.

4. The average speed of every third car passing an elementary school is 33 mph.

5. The average annual salary of every employee at a law firm is $68,500. The average annual salary of every employee under the age of 30 at a law firm is $57,800. Identify the population, parameter, sample, and statistic.

Population: Parameter:

Sample: Statistic:

Describe the relationship between samples and populations.
In your opinion, when is it best to collect data from both sets?

What do you know about the terms "quality," and "quantity?"

- Based on this, hypothesize: What do you think the difference between
                                         qualitative data and *quantitative* data is?

☆ **Qualitative Data**   ☆ **Quantitative Data**

✎ Determine whether the data are qualitative or quantitative.

6. The average speed of racehorses   7. Jobs of 10th and 11th grade students

8. Addresses of all members of a club   9. Populations of cities in Union County, NJ

10. Telephone numbers in a directory   11. Test scores of students in this class

12. Create any example of qualitative data, according to your interests.

13. Create any example of qualitative data, according to your interests.

☙ On a post-it, create a **CLOSER**. Then visit the gallery, and draw a ☺ on your favorite!

CL: (any **C**oncept you **L**earned)

OSE: (any **O**ne **S**pecific **E**xample)

R: (**R**elevance to either your life or mathematical experiences, past, present, or future)