

Using the following sources answer the questions about descriptive and inference statistics.

- <https://statistics.laerd.com/statistical-guides/descriptive-inferential-statistics.php>
- <https://www.statisticshowto.com/probability-and-statistics/descriptive-statistics/>
- <https://www.statisticshowto.com/inferential-statistics/>
- <https://sciencestruck.com/descriptive-vs-inferential-statistics>
- <https://www.thoughtco.com/differences-in-descriptive-and-inferential-statistics-3126224>

1. In your own words, define

- descriptive statistics
- inferential statistics

2. What is the purpose/use of

- descriptive statistics
- inferential statistics

3. Define the following (your definitions should make it clear how these are different)

- continuous variables
- discrete variables

4. Not all descriptive statistics are equally useful for a variable. Which type of descriptives are best for

- continuous variables
- discrete variables

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In addition to the online resources, you can also use chapters 11, 13-15 of your text book and to address the following questions. Troll through the chapters looking for definitions, descriptions, examples that will help you understand. There is no need to “read” them.

1. In general what types of questions will each of the following answer? (Use “English” not math speak)

- Confidence Interval (CI)
- Hypothesis Testing (HT)
- Regression

2. Consider data about student participation and performance in particular course (for sake of discussion, let’s call it Ma 456). Pose a research question that could be addressed by each of the following types of hypothesis tests. Include a specific variable (you know about classes, so you can make them up), and be certain that your research question is sufficiently specific to ensure that the given test is best option.

- One-population, mean HT
- Two-population, mean HT
- Paired-sample, mean HT
- ANOVA
- One-population, proportion HT
- Two-population, proportion HT
- One-population, variance HT
- Two-population, variance HT
- One-population, mean CI
- One-population, proportion CI
- One-population, variance CI
- Two-population, mean CI
- Two-population, proportion CI
- Two-population, variance CI
- Regression