

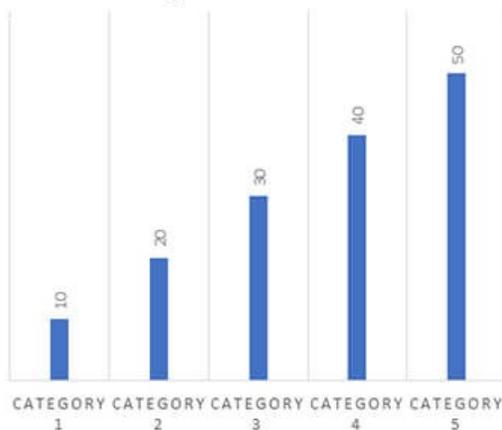
### Quiz 3

**Question 1:** Explain what inferential statistics are. Provide a sample research question (from your thesis or from anything else) that could be answered with inferential statistics.

Inferential statistics is when you are making a comparison between things.

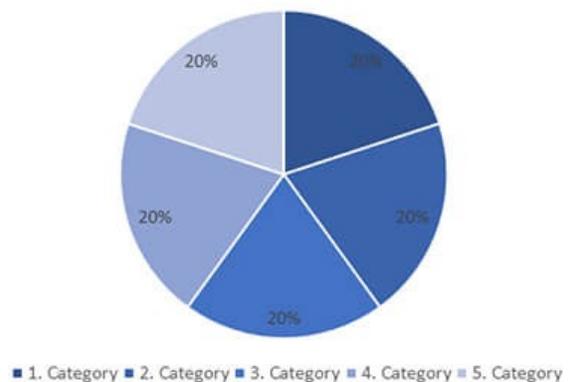
Example of Inferential statistics:

#### Descriptive Statistics



- Describes the characteristics of data
- **Example:** Population, Frequency of the variables

#### Inferential Statistics



- Studies the sample of the same data
- **Example:** Grade, Percentile



**Question 2:** Compare and contrast a Type 1 and Type II error in statistics. Why do we want to avoid these?

**Type 1:** It occurs if an investigator rejects a null hypothesis that is actually true in the population.

**Type 2:** It occurs if the investigator fails to reject a null hypothesis that is actually false in the population.

The reason why you want to avoid type 1 and 2 is because there's a risk of making each type of error in every analysis, and the amount of risk is in your control.

**Question 3:** How can one reduce the chance of a Type I error? Type II error? Describe a few for each.

Type 1 and type 2 can be reduce by abandon significance testing.

**How to reduce Type 1 & 2 error:**

**Type 1:** Is to raise your level of statistical significance.

**Type 2:** By making more stringent criteria for rejecting a null hypothesis.

**Question 4:** What is the difference between a one-sample and two-sample hypothesis test?

**One-sample:** Is a statistical hypothesis test used to determine whether the mean calculated from sample data collected from a single group is different from a designated value specified by the researcher.

**Two-sample:** Is a test performed on the data of two random samples, each independently obtained from a different given population.