



Instructions. Determine which statistical test you would use for each of the following cases. Possible tests include correlation, t-test, one-way ANOVA, two-way ANOVA, Regression, and Chi-Squared.

1. You have average carbon dioxide values for the summer and the winter and want to see if the mean carbon dioxide value is higher in the winter since plants reduce carbon dioxide and are more prevalent in the summer.

2. Three teachers are each teaching a series of 4 sophomore chemistry classes. They each use different teaching methods and want to determine if the mean score of their students differs by the method they are using to teach.

3. You have data on the number of fish spawning in an Oregon river each year and data on four aspects of the river environment for each of these years: chemicals in ppm, temperature, oxygen/carbon dioxide ratio, and river clarity. You want to know if higher levels of chemicals are associated with lower levels of spawning fish when controlling for temperature, oxygen/dioxide ratio, and river clarity.

4. You want to confirm that the risk of getting heart disease is higher for males than females and have autopsy data on 5000 people including sex (male and female) and whether they had heart disease (yes or no).

5. You are interested in noise pollution and want to see if the decibels of noise is higher when the population is higher.

6. You are testing two over the counter pain medications (Tylenol and Advil) for their ability to relieve three types of pain, headache, muscle pain, and joint pain. You want to know if different medicines are better for different types of pain.

