# Practice Problem: The ANOVA -test

Height of white spruce trees. In forestry, the diameter of a tree at breast height (which is fairly easy to measure) is used to predict the height of a tree (a difficult measure to obtain). Silviculturists working in British Columbia’s boreal forest conducted a series of spacing trials to predict the heights of several species of trees. The data set [whitespruce.txt](https://onlinecourses.science.psu.edu/stat501/sites/onlinecourses.science.psu.edu.stat501/files/data/whitespruce.txt) contains the breast height diameters (in centimeters) and heights (in meters) for a sample of 36 white spruce trees.

1. Is there sufficient evidence to conclude that there is a linear association between breast height diameter and tree height? Justify your response by looking at the fitted line plot and by conduction the analysis of variance -test. In conducting the -test, specify the null and alternative hypotheses, the significance level you used, and your final conclusion.
2. Which value in the ANOVA table quantifies how fa the estimated regression line is from the “no trend” line? That is, what is the particular value for this data set?
3. Use the Minitab output to illustrate, for this example, the relationship between the -test and the ANOVA -test for testing against .