

Consider the data in problem 11 on page 471.

1. Make a scatterplot of the circumference (x) versus height (y) for the trees. Does it suggest the relationship is linear?
2. Is there evidence of a significant linear correlation between the circumference and height of the trees? Conduct the appropriate hypothesis test.
3. What is the linear regression model for predicting height of the tree (in feet) from the circumference (in feet)?
4. Interpret the slope in the context of this problem (what does it mean)?
5. Is there evidence to show that, on average, these trees increase more 3 feet in height for each additional foot of circumference?
6. With 95% confidence, estimate the slope of the population regression line.
7. Estimate, with 95% confidence, the population mean height of trees that have circumference of 4 feet. Interpret your result.
8. Give an interval that predicts a range of values containing 95% of the heights of individual trees having circumference of 4 feet. Interpret your result.
9. (Will cover on Thursday) What percentage of the variation in heights of the trees is explained by the linear relationship with circumference?