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# Statistics for laboratory scientists II

## Homework problems for lecture 3

1. [Like problem 10.35, pg 421, in Samuels & Witmer]

An ecologist studied the spatial distribution of tree species in a wooded area. From a total area of 21 acres, he randomly selected 144 plots, each 38 feet square, and noted the presence of absence of maples and hickories in each plot. The results are shown in the following table.

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Maples		
Hickories	<i>Present</i>	<i>Absent</i>
<i>Present</i>	26	63
<i>Absent</i>	29	26

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To test whether the presence of maples is independent of the presence of hickories:

- a. Calculate the chi-square test statistic and a corresponding P-value.
- b. Calculate the likelihood ratio test statistic and a corresponding P-value.
- c. Use R to perform Fisher's exact test
- d. **What do you conclude?**