

## Chapter 4 FRAPPY!

*Directions: Show all your work. Indicate clearly the methods you use, because you will be scored on the correctness of your methods as well as on the accuracy and completeness of your results and explanations.*

In a recent study, 166 adults from the St. Louis area were recruited and randomly assigned to receive one of two treatments for a sinus infection. Half of the subjects received an antibiotic (amoxicillin) and the other half received a placebo.

(a) Describe how the researchers could have assigned treatments to subjects if they wanted to use a completely randomized design.

(b) All the subjects in the experiment had moderate, severe, or very severe symptoms at the beginning of the study. Describe one statistical benefit and one statistical drawback for using subjects with moderate, severe, or very severe symptoms instead of just using subjects with very severe symptoms.

(c) At different stages during the next month, all subjects took the sino-nasal outcome test. After 10 days, the difference in average test scores was *not* statistically significant. In this context, explain what it means for the difference to be not statistically significant.

(d) One possible way that researchers could have improved the study is to use a randomized block design. Explain how the researchers could have incorporated blocking in their design.