Statistical Inference for Differences in Proportions

Problem 1.

Treating AIDS. In a large study on the effectiveness of the drug AZT in preventing AIDS among people infected with HIV, 435 subjects received AZT while the remaining 435 subjects recieved a placebo. At the end of the study, 17 AZT patients and 38 placebo patients had contracted AIDS.

(a) Compute the sample proportions of subjects in each sample that contracted AIDS.

(b) Find a 95% confidence interval for the difference between the proportion of placebo patients who would contract AIDS versus the proportion of AZT patients who contract AIDS.

(c) Formally test the hypothesis that these two population proportions are equal versus the alternative that the placebo proportion is greater.