

ECO220Y: Homework, Lecture 13

Readings: Chapter 12

Exercises: Chapter 12: 1, 2

Problems:

(1) A doctor suspects that a patient may have a rare disease. This disease is seldom serious, but the treatment is less expensive the earlier the disease is discovered. In testing for the disease, should the null hypothesis be that the patient does or does not have the disease?

(2) A renowned political forecaster conducts an election-day opinion poll, hoping to make an early prediction of a presidential race that has been considered too close to call. There will be considerable glory if the prediction is correct, but even larger embarrassment if the prediction is wrong. If poll's results are not decisive, the forecaster will just say, "It is too close to call." Should the null hypothesis be that the incumbent will get more than 50 percent of the votes, less than 50 percent, or exactly 50 percent?

(3) Draw a diagram to show the Type I and Type II errors assuming that under the null hypothesis, population proportion is 0.3, while the true population proportion is 0.4 (this is, of course, unrealistic assumption).