

Economics 310 - Fall 2004
Menzie Chinn

Problem Set #3

This problem set is due in lecture on Monday November 8. Be sure to show all work; an answer without explanation is not enough. Write your name and the name of your TA on your problem set. Staple your problem set.

Answer all questions below. Problem numbers not prefaced by "X" come from your textbook.

- 5.56
 - 5.62
 - 5.68
 - 5.74
 - 5.84
 - 6.20
 - 6.28
 - 6.46
 - 7.4
 - 7.6
 - 7.7
 - 7.9
 - 7.20
 - 7.42
 - 7.46
 - 7.66
 - 7.68
-
- X1. An elevator can carry up to 3500 pounds. The manufacturer has included a safety margin of 500 pounds and lists the capacity as 3000 pounds. The building's management seeks to avoid accidents by limiting the number of passengers in the elevator. If the weight of the passengers using the elevator is distributed $N(155, 625)$, what is the maximum number of passengers who can use the elevator if the odds against exceeding the rated capacity are to be less than $3/10,000$?

- X2. The distribution of the IQ of a randomly selected UW student is distributed $N(110, 16)$. What is the probability that the average of IQ's of 10 randomly selected students from UW is at least 112?
- X3. What would a 100% confidence interval look like? Can you think of a specific example when such an interval would be useful?
- X4. Either take an example from an actual poll or make one up, and explain in detail where the ubiquitous disclaimer "margin of error +/- 3%" comes from.
- X5. A sample of 225 is draw from a hypergeometric distribution; your sample has mean 6 and sample variance 3.39. Calculate a 95% confidence interval for μ , the expected value of this hypergeometric distribution.