

Lecture 26

April 1, 2015

1. Try 5.4.51. Hint: Find $P(\bar{X} \leq 11)$ when $n = 5$ and $P(\bar{X} \leq 11)$ when $n = 6$. We need the probability that $(\bar{X} \leq 11 \text{ when } n = 5)$ AND $(\bar{X} \leq 11 \text{ when } n = 6)$ assuming that each day is independent.
2. Try 5.4.53. Hint: Follow the lecture.
3. Try 5.5.65. Hint: Find the mean and standard deviation for $\bar{X} - \bar{Y}$ with the linear combination formula and apply the normal distribution table with that mean and standard deviation. In part (b) since $n \geq 30$, we can still use the normal table by the central limit theorem. Do you see why $V(\bar{X} - \bar{Y}) = V(\bar{X}) + V(\bar{Y})$ (not a minus)?
4. Try 5.5.67. Do you see that the total length is $X_1 + X_2 - X_3$ where X_3 refers to the overlap. Find the mean and standard deviation of this linear combination and apply the normal distribution table with that mean and standard deviation.