

Statistics 111 Homework 5 - Due in recitation on Friday, March 28

Note that all Chapter 6 questions assume the population SD σ is known.

1. IPS 6.6, p. 396 [Osteocalcin]
2. IPS 6.10, p. 397 [Apartments]
3. IPS 6.16, p. 398 [Fuel efficiency]
4. Consider taking a random sample from the population of male industrial workers in London who have experienced a major coronary event. You are interested in estimating the mean systolic and diastolic blood pressures for this population. A sample of 86 workers who experienced a major coronary event has mean systolic blood pressure = 143 mm Hg. Assume the population standard deviation is $\sigma = 24.4$ mm Hg.
 - a. Construct a 95% confidence interval for the population mean systolic blood pressure.
 - b. How does this interval change if we want 90% confidence?
 - c. How does this interval change if we want 99% confidence?
5. IPS 6.34, p. 417 [Hypotheses]
6. IPS 6.54, p. 420 [Sonnets]
7. IPS 6.62, p. 422 [Random Number Generator]
8. IPS 6.104, p. 443 [Different sample sizes]
9. IPS 6.106, p. 443 [Cellulose Content]
10. A dataset available on the website (`golffee.txt`) gives the fees (cost in \$) to play an 18-hole round of golf on a weekday for a random sample of 29 golf courses from the approximately 19,000 courses stored on the web site www.golfcourse.com.
 - a. Find a 95% confidence interval for the mean cost of playing 18 holes on a weekday (Assume that the population SD σ is known and equal to the sample SD s)
 - b. Conduct a hypothesis test (with two-sided alternative) that the mean cost of playing 18 holes is \$25. Use a 0.05 level test to decide whether or not to reject the null hypothesis. Be sure to state your null and alternative hypotheses. What is the p-value of your test?