

HW 8 [PG] (Due Oct 24):

Page 35 (Chapter 2): 17, 18, 19

Chapter 9, Page 229: 11, 12

Also, read and think about Exercises 1 to 8 on page 254. You do not need to turn in Exercises 1 to 8.

We worked out Chapter 2: 17, 18, and 19 in the lab, so only the solutions for Chapter 9: 11 and 12 are given here.

11. a. We use the t -distribution with $df = 7$, since the population standard deviation is unknown. From the data, the sample mean calcium level $\bar{x}_c = 3.14$ and the sample standard deviation $s_c = 0.51$. A one-sided lower 95% confidence bound for the population mean calcium level is

$$3.14 - 1.895 \times (0.51/8) = 2.80.$$

b. The sample mean albumin level $\bar{x}_a = 40.4$ and the sample standard deviation $s_a = 3.0$. A one-sided lower 95% confidence bound for the population mean albumin level is

$$40.4 - 1.895 \times (3.0/\sqrt{8}) = 38.4.$$

c. The lower 95% confidence bound for the mean calcium level does not lie within the normal range of values; this suggests that calcium levels are elevated for this group. There is no evidence that albumin levels differ from the normal range.

12. a. A 95% confidence interval for μ is (86.5, 89.4).

b. If repeated samples of size 462 were drawn from this population, then approximately 95% of the confidence intervals would cover the population mean μ .

c. A 90% confidence interval for μ is (86.7, 89.2).