

Chapter 23: The Accuracy of Averages

This chapter redoes chapters 20 and 21 for averages instead of percentages. There is potential confusion of the SD with the SE for the sample average. This arises because the average of the box is equal to the expected value for the sample average.

For the SE, we will use the alternate formula found on the top of page 415, rather than the bottom formula in the box of page 410.

Section 23.1: We will only use the box on page 410 for the EV; we will use the formula on the top of page 415 for the SE. Both boxes on page 412 are important.

Suggested problems for study: A: pages 413 and 414: (all) 1 to 10.

Section 23.2: A very important section. Read carefully until you are able to avoid confusing the SD with the SE for the sample average. The box on page 416 is useful. Also of importance is finding the confidence interval and understanding the reasons—and the conditions required—for a valid normal approximation. Several rereadings of 23.2 are advised.

Suggested problems for study: B: pages 420–422: 1–7 and 9; also (hard) problem 8 on page 421.

Section 23.3: A good summary of the course. The box on page 422 is useful.

Suggested problems for study: C: page 423: 1–5; and (not as important) page 424: 6.

Section 23.4: Just read.

Suggested problems for study: D: pages 424 and 424: 1, 2, 6, and 7; also (easy) page 425: 5.

Chapter Summary: page 436 and 437: points 1–6 are not too important but worth a look.

Review Exercises

Homework: 1, 2, 8, 10 (of these, 1 and 10 are most important)

Comments on HW:

Problem 1 is simple but important. Make sure your denominator in the formula for the standard units is correct.

Problem 2 tests all of the ideas in the chapter. Be careful with part (c). It is based upon section 23.2.

Problem 8 is a dizzying and unwieldy problem. Try first to write down all the numbers in it and label each with what it represents. Then answer the questions with explanations.

In Problem 8: Parts (a) and (b) are basic. Parts (c) and (d) are tricky—be careful. Part (e) is very important; it goes to the heart of the course. Please reread section 23.2 if necessary to get a confident and definitive answer and a good explanation for part (e).

Problem 10 is *very* important. It tests the ideas of section 23.2.

In Problem 10: Part (a) is basic. Be sure to understand the difference between parts (b) and (c). Part (d) is important and perhaps a little tricky; don't get fooled. Parts (e) and (f) are important but somewhat difficult at first; seek the answer in section 23.2.

Also look at problems 3–6, 9, 11, and 12 on pages 426–428.

Special Review Exercises: Review of the whole course

Look at problems 8, 9, 10, 11(a), 13, and 15 on pages 430 and 431; 18–20 on page 432; and 26, 27, and 29 on pages 435 and 436.

Also (but not as important) consider problem 24 on page 434 and problem 30 on page 436.