

STAT200 Problem Solutions for Chapters 3 – 5

These truly are bare answers. Yours must be much more explanatory.

Ch 3

2.28: 98.17, close to the original, but different from 98.6.

2.32: You need to work this one out yourself. The answers must hold for all k . You need to do a general solution—an example won't do.

3.4: No. Why?

3.5: Range 26.0 sec, $s^2 = 89.6 \text{ sec}^2$, $s = 9.5 \text{ sec}$. The sample is very small.

3.8: Range = 33.0 min, $s = 8 \text{ min}$, 100 min is within 1 SD, so *not unusual*.

3.18: All units in pounds

Regular - Range = 0.00970, $s = 0.00349$

Diet - Range = 0.01380, $s = 0.00554$

Close enough.

4.14: $z = 0.47, 0.22, 0.60$ so c.

5.6: No

5.14: a. 2, 5, 14, 16, 50; b. 11, c. 50.

Ch 4

2.16: 0.231, no—why?

2.26: a. br/br, br/bl, bl/br, bl/bl; b. 1/4; c. 3/4.

3.22: 6/7, 6/7, I like the table.

5.20: 0.114.

6.6: Generate randomly an integer between 1 and 4. Let 1 = yellow, 2, 3, 4 = green. Repeat 12 times.

7.14: 1/45,057,474

7.26: a. 16,384; b. 1001, c. $1001/16,384$, d. $p > 0.05$ so *no*.

Ch 5

2.10: Probability distribution with $\mu = 4.0$ and $\sigma = 0.2$.

2.16: a. 0.275; the probability of 11 or more Mexicans; b. *No* because $P(11 \text{ or more}) = 0.275$, which is high.

2.20: a. 1.2 cents; b. 1.2 cents less the cost of a stamp, so a negative number.

3.14: a. 0.00220; c. 0.0330.

3.32: a. 0.882; b. *Yes* because $P(7 \text{ or less})$ is less than 0.05, which is small.

4.10: a. $\mu = 5.0$, $\sigma = 2.0$; b. *Yes* (why?).

4.14: $\mu = 25.5$, $\sigma = 3.6$, *effective*.

4.18: $\mu = 142.8$, $\sigma = 11.9$, *no cancer*.