

Statistics 23, Section 1, Homework # 5

Due: Thursday, September 30, 1999

2.21, using Excel. Note: experiment with simultaneous construction of 3 histograms.

2.24 (45%, 0.325)

B6 For the data from 2.23, using Excel:

- a. Construct a histogram using bins: $(0, 1000]$, $(1000, 2000]$, ..., $(11,000, 12,000]$.
- b. The distribution in (a) is quite “asymmetric”. A better “view of the data” is the log scale. Construct a histogram for $\log_{10}(\text{rate})$, using the class intervals $(2.2, 2.4]$, $(2.4, 2.6]$, ..., $(4, 4.2]$.
- c. Repeat (b) using half the binwidth and comment on how the resulting histogram compares with (b) in terms of both “big picture” and “small scale”.

B7 Use Excel to construct probability histograms (Hint: don't try to use the Excel Histogram”, instead create a column of x values and $f(x)$ values, and use “Chart”) for:

- a. $\text{Bi}(30, 0.5)$
- b. $\text{Bi}(30, 0.7)$
- c. $\text{Bi}(30, 0.95)$
- d. Which have similar “shapes”? Which have different “shapes”?

2.46a (30.9)

B8 Calculate (and think about as a “balance point”) weighted averages of 1, 2, 3, 10 for the weights:

- a. $\frac{1}{4}, \frac{1}{4}, \frac{1}{4}, \frac{1}{4}$ (4)
- b. 0.1, 0.1, 0.1, 0.7 (7.6)
- c. 0.3, 0.3, 0.3, 0.1 (2.8)
- d. $\frac{1}{3}, \frac{1}{3}, \frac{1}{3}, 0$ (2)
- e. 0, 1, 0, 0 (2)

4.25a

4.22a (3.8).