Chapter 6 of Moore:

Do Problems 6.2, 6.3, 6.5, 6.8, 6.9, 6.12, 6.18

Additional Part for 6.5: For the situation of 6.5(b), also make a 99% prediction interval for a single additional IQ score from this (approximately normal) population.

Additional Part for 6.18: For the situation of 6.18(b), also make 95% prediction intervals for single additional performance scores for each type of store (assuming the populations of scores are normal).

Do problems 6.26, 6.28, 6.30, 6.32, 6.34, 6.52, 6.53, 6.77

Additional Part for 6.77: For the situation of 6.77(a), even assuming these data are a "random sample" of returns on Treasury bills, it is probably not safe to use the method from class to make a prediction interval for an additional return. Why?

Chapter 7 of Moore:

Do Problems 7.2, 7.3, 7.11(b), 7.12, 7.15

Additional Part for 7.15: For the situation of 7.15(b), even assuming these data are for a "random sample" of retail stores, it is probably not safe to use the method from class to make a prediction interval for the number of mixers returned at a single additional store. Why?

More Real Inference

Suppose that it is sensible to treat these 40 funds as a random sample of the very large population of mutual funds.

a) Give a 95% confidence interval for the mean expense rate of mutual funds in this year.

b) Judging that the histogram above is reasonably "bell-shaped" it is perhaps sensible to assume that expense rates were normally distributed in 1991. Under this assumption, give an interval that you are "95% sure" would contain one additional rate drawn from this population.

2. Below are 1991 Expense Ratios for small samples of mutual funds of two different types, namely "Capital Appreciation" and "Equity Income Oriented."

<table>
<thead>
<tr>
<th>Capital Appreciation</th>
<th>Equity Income Oriented</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.00, 1.02, .98, 1.14</td>
<td>.65, .70, .67, .68, .70, .79</td>
</tr>
</tbody>
</table>

Suppose that it is sensible to treat these samples as randomly selected from the two very large populations of mutual funds of these two types. Moore's Section 7.2 offers one approach to inference for \( \mu_{CA} - \mu_{EIO} \). Deilman (in his Sections 2.8 and 2.9) offers two other approaches. (Dielman's first approach is like Moore's, except that instead of using \( df \) obtained from the smaller of the two sample sizes, he uses "\( df \)" on the bottom of page 54 or middle of page 63. His second approach is based on an assumption that \( \sigma_{CA} = \sigma_{EIO} \), a "pooled sample standard deviation" defined on page 55 and \( df = n_1 + n_2 - 2 \).)

a) Test the hypothesis that the the population mean expense ratios for these two types of funds were the same in 1991. First use Moore's method. Then use Dielman's 2nd method (based on the \( \sigma_{CA} = \sigma_{EIO} \) model assumption).

b) Give 95% confidence intervals for the difference in population mean expense ratios. First use Moore's method. Then use Dielman's 2nd method (based on the \( \sigma_{CA} = \sigma_{EIO} \) model assumption).