

Solution to Assignment 5

7.8: **(a)** $\delta = 0.0896$. **(b)** The 95% confidence interval is (0.1647, 0.3353). It does contain p .

7.18: The chance that neither contain their mean is 0.01. The chance that both contain their mean is 0.81.

8.2: $\hat{\lambda} = 3.89$. The fit is not that good. The observed frequencies seem more spread out than they should be if the distribution is Poisson.

8.4: **(a)** The method of moments estimate is $\tilde{\theta} = 5/12$. **(b)** $s_{\tilde{\theta}} = 0.189$. **(c)** The maximum likelihood estimate is $\hat{\theta} = 1/2$. **(d)** $s_{\hat{\theta}} = 0.158$.

8.6: **(a)** The method of moments estimate of σ is

$$\tilde{\sigma} = \sqrt{\frac{1}{2n} \sum_{i=1}^n X_i^2}.$$

(b) The maximum likelihood estimate is

$$\hat{\sigma} = \frac{1}{n} \sum_{i=1}^n |X_i|.$$