BMTRY 711 Analysis of Categorical Data
Spring 2011
Assignment 2

INSTRUCTIONS:
Complete with legible handwriting/mathematical editor. Combination of the two is also OK.

DUE DATE: 02/11/11 in my mailbox located at DBE (by 5.00 PM)

PROBLEMS:

1. The number of shutdowns per day caused by a breaking of the thread was noted for a nylon spinning process over a period of 10 days (Ott, 1983). The data collected are displayed below:

y_i	0	1	2	3	4	≥ 5
n_i	20	28	15	8	7	12

   Fit a Poisson distribution to the above data and test for goodness of fit at $\alpha = 0.05$ level of significance. Provide an interpretation of the results.

2. Agresti 1.7
3. Agresti 1.8
4. Agresti 1.22
5. Agresti 1.26
6. Agresti 1.28
7. Agresti 1.33(c only)
8. Agresti 1.34
9. Use the delta method to show

$$\widehat{Var}\left(\log(\widehat{RR})\right) = \frac{1-p_1}{n_1 p_1} + \frac{1-p_2}{n_2 p_2}$$