

Math 762- Exam II**April 17, 2003****Name:** _____**Student #:** _____

Must show all work for full credit!!!

I pledge that I have not violated the NJIT code of honor_____

Please note that the problems with specified number and page are from the course textbook: A Course in Mathematical Statistics, By George G. Roussas - Second Edition1. Problem # **11.1.5** page 270. (10 pts)

2. If X_1, \dots, X_n is a random sample of size n from uniform $(-\theta, \theta)$, $\theta \in (0, \infty)$
Show that $T = \max(|X_1|, \dots, |X_n|)$ is a sufficient statistics for θ . (15 pts)

3. Problem # **11.4.2** page 281. (15 pts)4. Problem # **12.2.4** page 287. (15 pts)

5. Problem # **12.3.6** page 292. {For the sake of clarity please note that X is negative binomial with parameters $(r, p = \theta)$, where r is known} (10 pts)
6. Problem # **12.5.2** page308. In this problem, also find the MLE of $P(X_1 = 0)$ (15 pts)
7. Problem # **12.9.5** page322. (10 pts)

8. Problem # **13.2.5** page337. (10 pts)