Math 159, Spring 2005
Professor Hardin
HW #5
due Tuesday 3/8/05

Section 5.1: 2, 3, 4, 6

1. For testing:
   $H_o : F(X) \leq G(X)$
   $H_1 : F(X) > G(X) + \Delta \quad (\Delta > 0)$
   you choose to use a type I error probability of $\alpha = 0.1$. Using equal sample sizes, what should the common value of $m = n$ be to have power at least 0.88 against an alternative where $\Delta = 0.8$?

2. Consider the $(1 - \alpha)$ 100% CI derived in section 5.1. Show that when $\alpha = 2/\binom{N}{n}$,

$$\begin{aligned} L &= X^{(1)} - Y^{(m)} \\ U &= X^{(n)} - Y^{(1)} \end{aligned}$$

   where $X^{(1)} \leq \ldots \leq X^{(n)}$ are the ordered X's, and $Y^{(1)} \leq \ldots \leq Y^{(m)}$ are the ordered Y's.