Math 165: Honors Calculus I
Assignment 5 *Sept. 4, 1998*

1. Compute the row of Pascal's Triangle for $n = 8$.

2. Show that the row of Pascal's Triangle that begins $1 \quad n \quad \cdots$ adds up to 2^n, i.e., show that $2^n = \sum_{k=0}^{n} \binom{n}{k}$.

3. Show that $0 = \sum_{k=0}^{n} (-1)^k \binom{n}{k}$.

4. Show that $\binom{n}{k} = \frac{n}{k} \binom{n-1}{k-1}$.