

**Math 165: Honors Calculus I**  
**Quiz 2** *Sept. 15, 1994*

Name: \_\_\_\_\_

1. Define the following:

a)  $k!$

b)  $\binom{n}{k}$

c) a function

d) a polynomial

2. a) State the Binomial Theorem.

b) Determine the coefficient of  $x^8$  in  $(2x^2 - 3)^{15}$  (give its prime factorization!).

c) Sketch the graph of the function  $f(x) = x + [x]$  for  $0 \leq x \leq 3$  ( $[x]$  is the greatest integer less than or equal to  $x$ ).