

# CPS102 hw1c

January 24, 2007

## Problem 1

Show that if  $n$  is an integer then

$$\sum_{k=0}^n 3^k \binom{n}{k} = 4^n$$

## Problem 2

How many ways are there to choose 12 apples from a bushel containing 20 indistinguishable Delicious apples, 20 indistinguishable Macintosh apples, and 20 indistinguishable Granny Smith apples, if at least 3 of each kind must be chosen?