Problems from Assignment 3

1. Prove Pascal's Identity:
$$\binom{n+1}{k+1} = \binom{n}{k} + \binom{n}{k+1}$$
   analytically (that is by manipulating the equations on the right to get the left).

2. Suppose that 7 cards from a standard deck are dealt. What is the probability of getting a hand of "three pairs"? (That is three pairs and the seventh card is different from the other six so there is no three of any denomination).