DIS 4B

Topic: Counting

Sample K from n

	w/ replacement	w/o replacement
order matters	n^K	$\dfrac{n!}{(n-k)!}$
order doesn't matter	$\binom{n+K-1}{n-1}$	$\binom{n}{k}$

same as $\binom{n+K-1}{K}$

Combinatorial Proof   using counting argument to prove an equality

use two different ways to count the same thing.

Technically you can count anything, but I personally like to formulate my argument using bit strings or subsets.