Lec1

Sunday, January 2, 2022 6:34 PM

A Sample Space is the Set of all Possible outcomes of an experiment.

An Event is a Subset of the Sample State.

e.g. Set of all results of roling 2 dice. , [6, 6].
Sample Space event

Naïve Def of Probability: $P(A) = \frac{\#\text{ favorable outcomes}}{\#\text{ Possible outcomes}} = \frac{\#\text{ favorable}}{\#\text{ Possible}}$

Assumes: ① All outcomes equally likely

② Sample Space is Finite [Countable?]

Counting:

① Multiplication Rule: Redacted for obviousness.

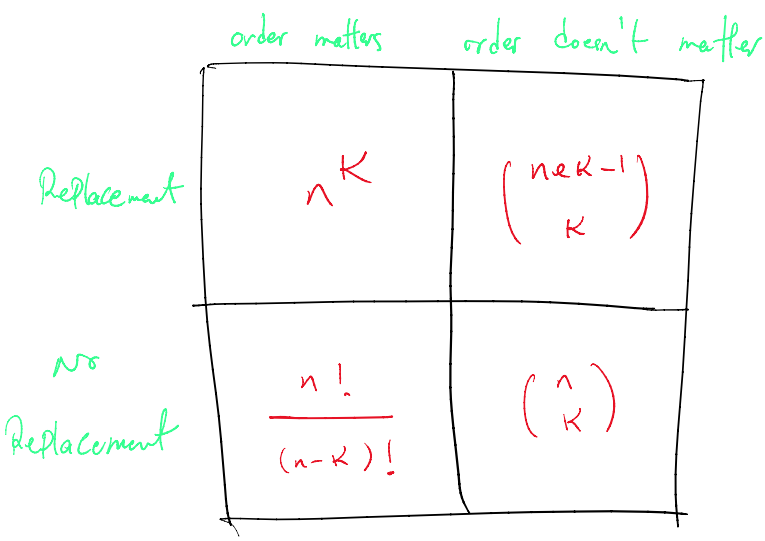
Binomial Coeff (Course 2's in Bad with names): $\binom{n}{k} = \frac{n!}{(n-k)!\,k!}$, 0 if $k > n$

Narrative: # Subsets of Size k of a group of n People.

[Set, So order doesn't matter]

Sampling Table: Chose k objects out of n:

order matters	order doesn't matter


order matters
order doesn't matter
Replacement
No Replacement
n^k
$\binom{n+k-1}{k}$
$\frac{n!}{(n-k)!}$
$\binom{n}{k}$