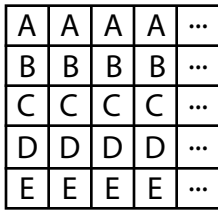
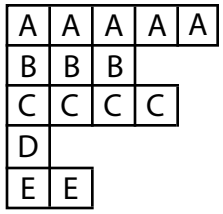
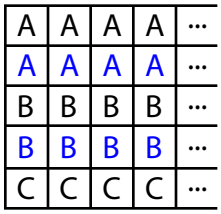
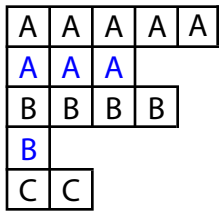
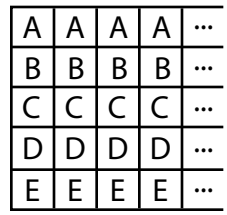
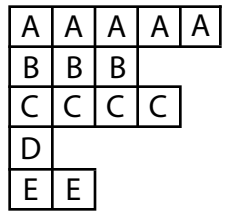
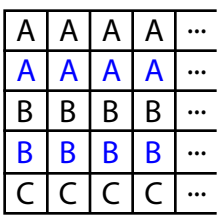
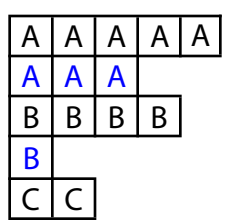
NUMBER OF ARRANGEMENTS: ONE POOL

	WITH REPETITION	LIMITED REPETITION	WITHOUT REPETITION
ORDER-CONSCIOUS	**WORDS** $S(N,k) = N^k$ N=5 n=∞ n_1=∞ n_2=∞ n_3=∞ n_4=∞ n_5=∞ 	$A(n_1,\dots,n_N,k)=\sum_{\substack{\sum k_i=k \\ k_i\le n_i}} \frac{k!}{\prod k_i!}$ N=5 n=15 n_1=5 n_2=3 n_3=4 n_4=1 n_5=2 	**PARTIAL PERMUTATIONS** $P(N,k) = \frac{N!}{(N-k)!}$ N=5 n=5 n_1=1 n_2=1 n_3=1 n_4=1 n_5=1 
PARTIALLY O.C. (indisting. items not O.C.)	N=3 n=∞ n_1=∞ n_2=∞ n_3=∞ 	N=3 n=15 n_1=8 n_2=5 n_3=2 	N=3 n=5 n_1=2 n_2=2 n_3=1 
NOT ORDER-CONSCIOUS	**MULTICOMBINATIONS** $M(N,k) = (\binom{N}{k})$ $= \frac{(N+k-1)!}{k!\,(N-1)!}$ N=5 n=∞ n_1=∞ n_2=∞ n_3=∞ n_4=∞ n_5=∞ 	$coef(n_1,\dots,n_N,k)$ N=5 n=15 n_1=5 n_2=3 n_3=4 n_4=1 n_5=2 	**COMBINATIONS** $C(N,k) = \binom{N}{k}$ $= \frac{N!}{k!\,(N-k)!}$ N=5 n=5 n_1=1 n_2=1 n_3=1 n_4=1 n_5=1 
	N=3 n=∞ n_1=∞ n_2=∞ n_3=∞ 	N=3 n=15 n_1=8 n_2=5 n_3=2 	N=3 n=5 n_1=2 n_2=2 n_3=1