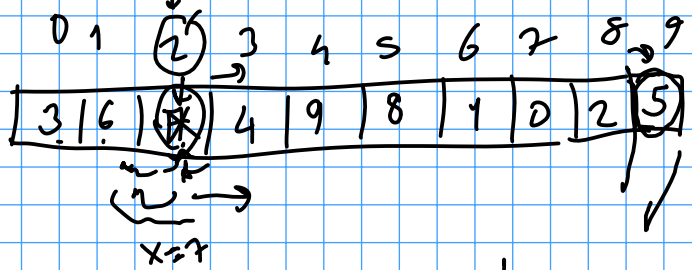
H1 H2 H3 H4 .. H10

H1 1st α H2 2nd α H3 3rd α ... H10 10th α

$$\frac{10!}{e} \Big/ 10! = \frac{1}{e}$$

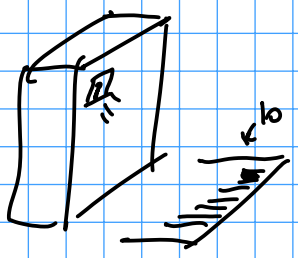


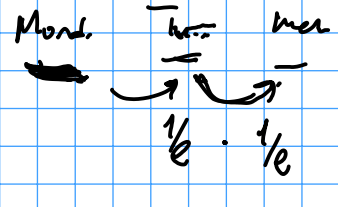
$$10 \to \frac{9!/e}{9!/e + 10!/e} = \frac{9!}{9! + 10!} = \frac{9!\,1}{9!(1+10)} = \frac{1}{11}$$

#st	#prob	#good	#all	p	derangement
1	1	0	1		
2	0	1	1		
3	1	2	3		
4	2	9	11	$\frac{3!}{e}$ $\frac{4!}{e}$	$\frac{3!+4!}{e}$
5	9	44	53		
6	44	265	309		
7	265	1854	2119		
8	1854	14833	16687		
9	14833	133496	148329 (-1)	$\frac{8!}{e}$ $\frac{9!}{e}$	$\frac{8!+9!}{e}$
10	133496	1334961	1468458 +1 → $\frac{1}{11}$		

$$\frac{1}{11} - \frac{1}{n_4} + \frac{1}{5!}$$

$$\frac{8!}{8!+9!} = \frac{1}{10}$$





$\frac{1}{e} \cdot \frac{1}{e} = \frac{1}{e^2}$