



identikkal
 independentikkal
 "Kuantikkal", 12aera $\begin{cases} \text{fermionikkal} \\ \text{bosonikkal} \end{cases}$

$$Z_N(T, V) = \sum_E e^{-E/kT}$$

$$\begin{cases} E = \sum_E n_E \cdot E \\ N = \sum_E n_E \end{cases}$$

$$Z_N(T, V) = \sum_{\{n_E\}} g(\{n_E\}) e^{-\frac{1}{kT} \sum_E n_E \cdot E}$$

$N = 0, 1, 2, 3, \boxed{\dots}, \infty$

↓ $N=5$

N hinke possible dier multizahlen energie-nuile denak \rightarrow arkatu epingda \Rightarrow



epingda

1	5	0	0	0	0	0	0	0	←
2	4	1	0	0	0	0	0	0	←
3	3	1	1	0	0	0	0	0	←
4	2	2	1	0	0	0	0	0	
5	2	1	1	1	0	0	0	0	
6	1	1	1	1	1	0	0	0	→ fermionen kanna!
7									
...									
n									
...									

beste kombinasyon arkate bai

eta hien modukkal
 hien energie-nuile denak
 hedakute

1 \emptyset
 1 \emptyset
 1 \emptyset
 1 \emptyset
 1 \emptyset
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