

Two Einstein Solids with given number of particles and total energy

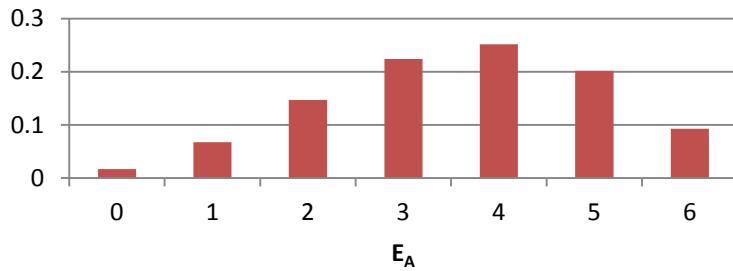
$N_A =$	$6 N_B =$		$4 E_{\text{tot}} =$		6
E_A	Ω_A	E_B	Ω_B	$\Omega = \Omega_A \Omega_B$	$P_A(E_A)$
0	1	6	84	84	0.016783217
1	6	5	56	336	0.067132867
2	21	4	35	735	0.146853147
3	56	3	20	1120	0.223776224
4	126	2	10	1260	0.251748252
5	252	1	4	1008	0.201398601
6	462	0	1	462	0.092307692
Total =			5005		

Ω_A is computed using: COMBIN(A5+\$B\$2-1,A5)

Typical questions -

- What is most probable state?
- What is least probable state
- What is the entropy for a given state?
- What is the equilibrium temperature?
- For how many microstates does energy go from A to B?
- What is the average , variance, standard deviation of E_A ?
- Compare slopes of the entropy plots.
- Compute by hand the above numbers of microstates.

$P_A(E_A)$



$\ln(\Omega_A)$	T_A^{-1}	T_A	$\ln(\Omega_B)$	T_B^{-1}	T_B
0			4.430817		
1.791759	1.522261	0.656917	4.025352	0.437734	2.28449
3.044522	1.116796	0.895419	3.555348	0.51481	1.942465
4.025352	0.89588	1.116221	2.995732	0.626381	1.596471
4.836282	0.752039	1.329719	2.302585	0.804719	1.24267
5.529429	0.649641	1.539311	1.386294	1.151293	0.868589
6.135565			0		

T_A^{-1} is found using $(H7-H5)/(A7-A5)$

$\ln \Omega_A$ and $\ln \Omega_B$ vs E_A

