

Effect of Quantum Size on the Population of States

$\Delta E = 5 \text{ kT}$			
state	E_i/kT	$e^{-E_i/kT}$	N_i/N_{tot}
0	0	1	0.99
1	5	0.00674	0.01
2	10	4.5E-05	0.00
3	15	3.1E-07	0.00
4	20	2.1E-09	0.00
5	25	1.4E-11	0.00
6	30	9.4E-14	0.00
7	35	6.3E-16	0.00
8	40	4.2E-18	0.00
9	45	2.9E-20	0.00
10	50	1.9E-22	0.00
11	55	1.3E-24	0.00
12	60	8.8E-27	0.00
13	65	5.9E-29	0.00
14	70	4E-31	0.00
sum=		1.00678	

$\Delta E = 1 \text{ kT}$			
state	E_i/kT	$e^{-E_i/kT}$	N_i/N_{tot}
0	0	1	0.63
1	1	0.367879	0.23
2	2	0.135335	0.09
3	3	0.049787	0.03
4	4	0.018316	0.01
5	5	0.006738	0.00
6	6	0.002479	0.00
7	7	0.000912	0.00
8	8	0.000335	0.00
9	9	0.000123	0.00
10	10	4.54E-05	0.00
11	11	1.67E-05	0.00
12	12	6.14E-06	0.00
13	13	2.26E-06	0.00
14	14	8.32E-07	0.00
sum=		1.581976	

$\Delta E = 0.1 \text{ kT}$			
state	E_i/kT	$e^{-E_i/kT}$	N_i/N_{tot}
0	0	1	0.10
1	0.1	0.90484	0.09
2	0.2	0.81873	0.08
3	0.3	0.74082	0.07
4	0.4	0.67032	0.06
5	0.5	0.60653	0.06
6	0.6	0.54881	0.05
7	0.7	0.49659	0.05
8	0.8	0.44933	0.04
9	0.9	0.40657	0.04
10	1	0.36788	0.04
11	1.1	0.33287	0.03
12	1.2	0.30119	0.03
13	1.3	0.27253	0.03
14	1.4	0.2466	0.02
15	1.5	0.22313	0.02
16	1.6	0.2019	0.02
17	1.7	0.18268	0.02
18	1.8	0.1653	0.02
sum=		10.508	