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We will see the analysis of the problem of calculating the probability of event:

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This will be very similar to the analysis of hashing n keys into a table of size 365.

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Sample space S : All n -tuples (l_1, l_2, \dots, l_n)
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$$P(B_n) = \frac{365^n}{365^n}$$

Note: Easy to calculate using $P(B_1) = 1$,

$$P(B_{n+1}) = P(B_n) \times \frac{365-n}{365}$$

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B_n : No two of the n people share a birthday.

A_n and B_n are complementary so

$$P(A_n) = 1 - P(B_n) = 1 - \frac{365^n}{365^n}$$

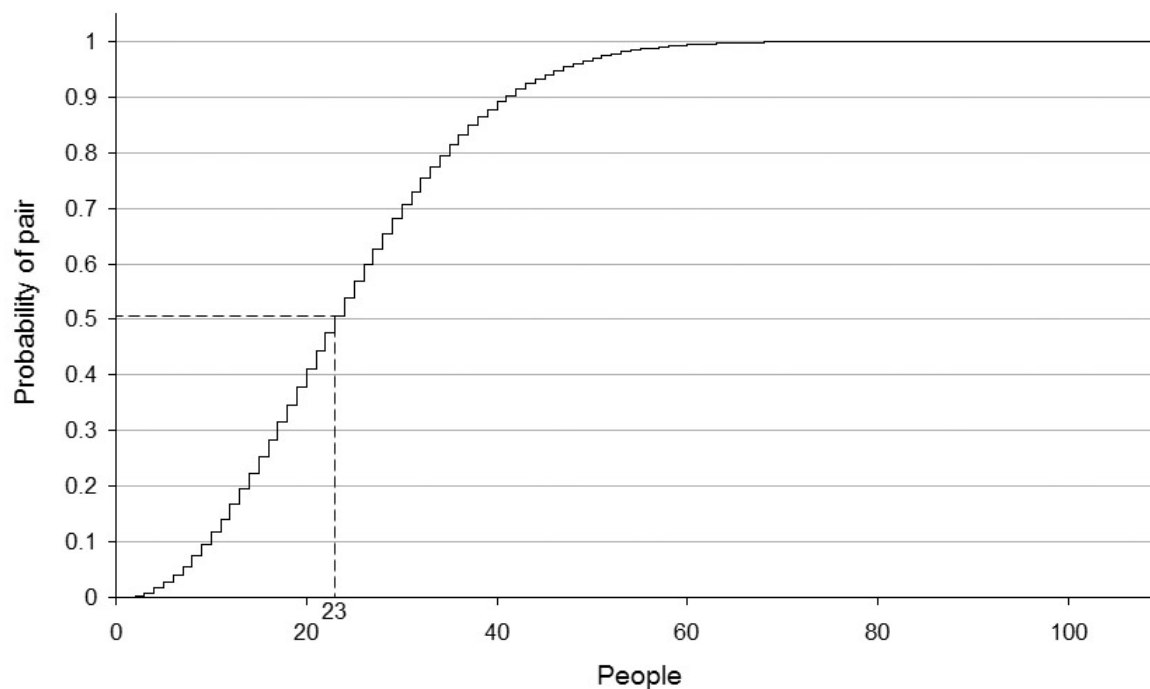
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n	A_n	B_n	n	A_n	B_n
1	0.00000000	1.00000000	16	0.28360400	0.71639599
2	0.00273972	0.99726027	17	0.31500766	0.68499233
3	0.00820416	0.99179583	18	0.34691141	0.65308858
4	0.01635591	0.98364408	19	0.37911852	0.62088147
5	0.02713557	0.97286442	20	0.41143838	0.58856161
6	0.04046248	0.95953751	21	0.44368833	0.55631166
7	0.05623570	0.94376429	22	0.47569530	0.52430469
8	0.07433529	0.92566470	23	0.50729723	0.49270276
9	0.09462383	0.90537616	24	0.53834425	0.46165574
10	0.11694817	0.88305182	25	0.56869970	0.43130029
11	0.14114137	0.85885862	26	0.59824082	0.40175917
12	0.16702478	0.83297521	27	0.62685928	0.37314071
13	0.19441027	0.80558972	28	0.65446147	0.34553852
14	0.22310251	0.77689748	29	0.68096853	0.31903146
15	0.25290131	0.74709868	30	0.70631624	0.29368375