

擲骰子

(1)擲兩粒骰子

點數和	2	3	4	5	6	7	8	9	10	11	12	k
方法數	1	2	3	4	5	6	5	4	3	2	1	C_1^{k-1}

$$x+y=k, k \geq 2$$

$$(x-1)+(y-1)=k-2$$

$$H_{k-2}^2 = C_{k-2}^{2+(k-2)-1} = C_{k-2}^{k-1} = C_1^{k-1}$$

(2)擲三粒骰子

點數和	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	k
方法數	1	3	6	10	15	21	25	27	27	25	21	15	10	6	3	1	C_2^{k-1}

$$x+y+z=k, k \geq 3$$

$$(x-1)+(y-1)+(z-1)=k-3$$

$$H_{k-3}^3 = C_{k-3}^{3+(k-3)-1} = C_{k-3}^{k-1} = C_2^{k-1}$$

$$k=9 \text{ 時, } (x-1)+(y-1)+(z-1)=6, C_2^{9-1}-3=28-3=25$$

$$k=10 \text{ 時, } (x-1)+(y-1)+(z-1)=7, (7,0,0)(6,1,0) \text{ 不行, } C_2^{10-1}-3-3!=36-3-6=27$$

(2)擲四粒骰子