

Number of Dice Rolls With Target Sum

You have n dice and each die has k faces numbered from 1 to k .

Given three integers n , k , and $target$, return the number of possible ways (out of the k^n total ways) to roll the dice so the sum of the face-up numbers equals $target$. Since the answer may be too large, return it modulo $10^9 + 7$.

Example 1:

Input: $n = 1$, $k = 6$, $target = 3$

Output: 1

Explanation: You throw one die with 6 faces.

There is only one way to get a sum of 3.

Example 2:

Input: $n = 2$, $k = 6$, $target = 7$

Output: 6

Explanation: You throw two dice, each with 6 faces.

There are 6 ways to get a sum of 7: 1+6, 2+5, 3+4, 4+3, 5+2, 6+1.

Example 3:

Input: $n = 30$, $k = 30$, $target = 500$

Output: 222616187

Explanation: The answer must be returned modulo $10^9 + 7$.

Constraints:

$1 \leq n, k \leq 30$

$1 \leq target \leq 1000$

$$n=2$$

$$K=6 \quad \text{target} = 7$$



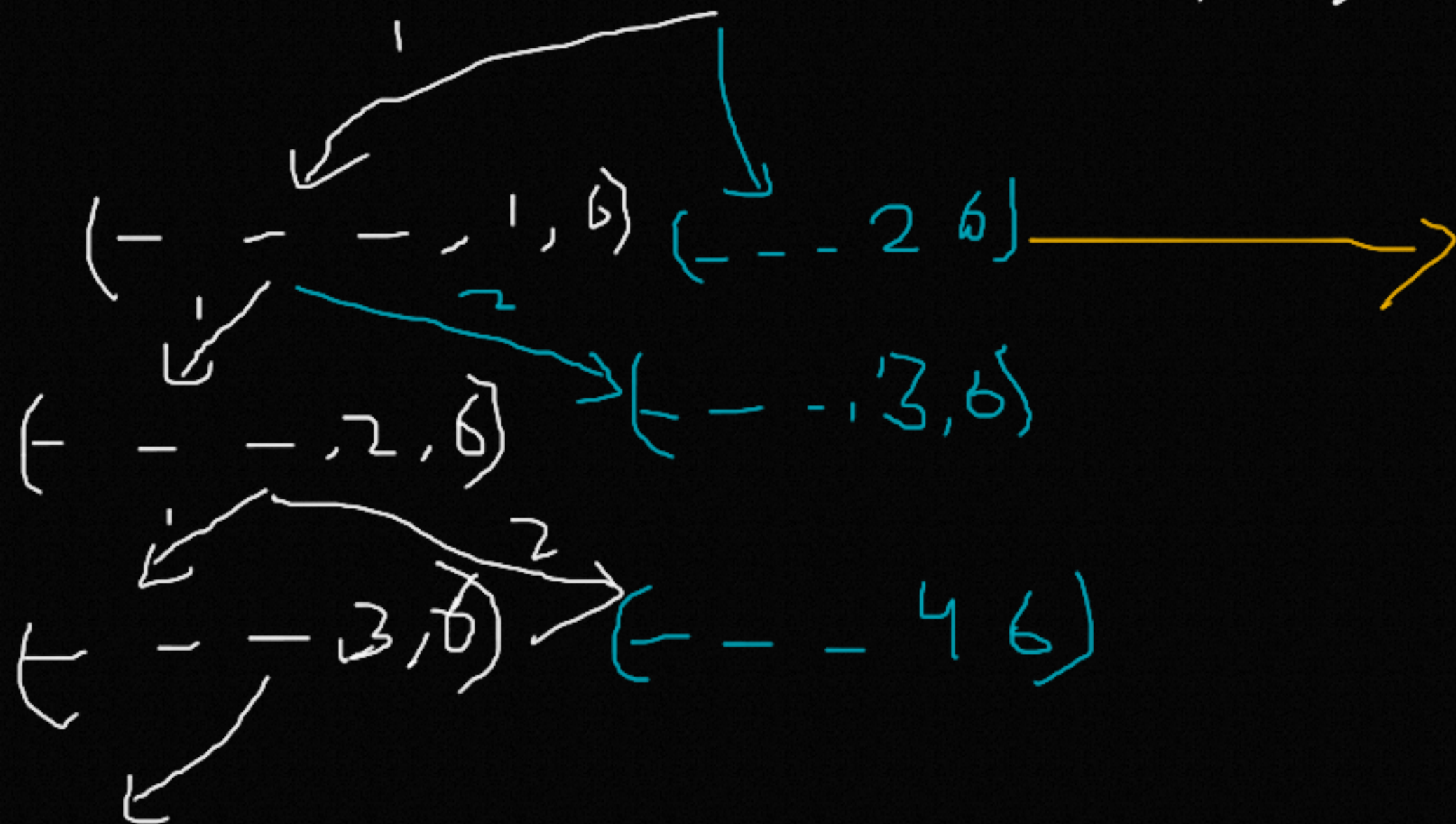
$$total = 6^2$$

We have to find which two dice give us sum 7 and return the count

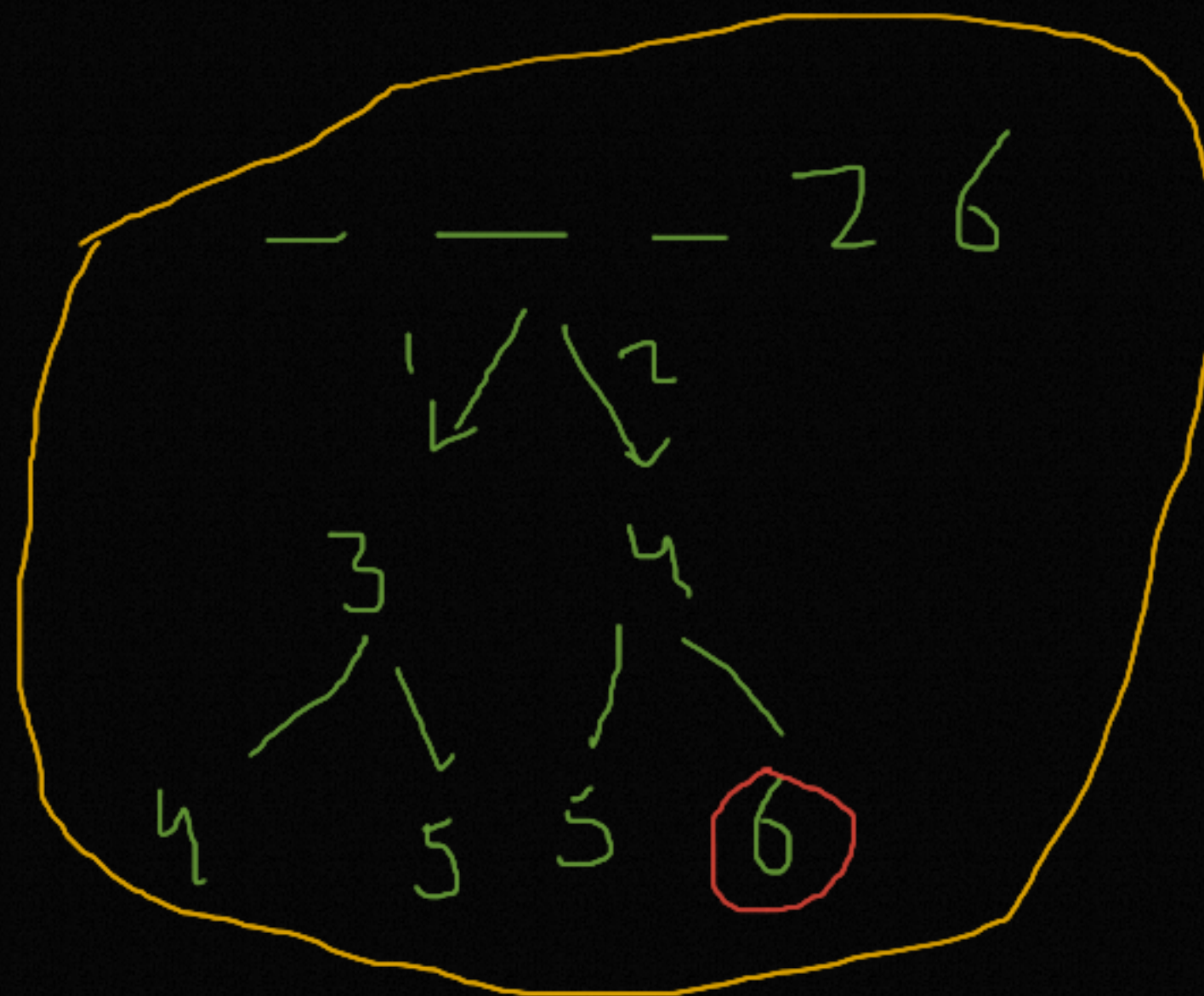
$n=3$ $n=2$ $target=0$

Sum
target

— — — — — , 0, 6



KHATAM



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