D. Memory and Scores

time limit per test: 2 seconds
memory limit per test: 512 megabytes
input: standard input
output: standard output

Memory and his friend Lexa are competing to get higher score in one popular computer game. Memory starts with score a and Lexa starts with score b. In a single turn, both Memory and Lexa get some integer in the range $[-k;k]$ (i.e. one integer among $-k, -k+1, -k+2, ..., -2, -1, 0, 1, 2, ..., k-1, k$) and add them to their current scores. The game has exactly t turns. Memory and Lexa, however, are not good at this game, so they both always get a random integer at their turn.

Memory wonders how many possible games exist such that he ends with a strictly higher score than Lexa. Two games are considered to be different if in at least one turn at least one player gets different score. There are $(2k+1)^{2t}$ games in total. Since the answer can be very large, you should print it modulo 10^9+7. Please solve this problem for Memory.

Input

The first and only line of input contains the four integers a, b, k, and t ($1 \le a, b \le 100$, $1 \le k \le 1000$, $1 \le t \le 100$) — the amount Memory and Lexa start with, the number k, and the number of turns respectively.

Output

Print the number of possible games satisfying the conditions modulo $1\,000\,000\,007$ (10^9+7) in one line.

Examples

input
1 2 2 1
output
6

input
1 1 1 2
output
31

input
2 12 3 1
output
0

Note

In the first sample test, Memory starts with 1 and Lexa starts with 2. If Lexa picks -2, Memory can pick 0, 1, or 2 to win. If Lexa picks -1, Memory can pick 1 or 2 to win. If Lexa picks 0, Memory can pick 2 to win. If Lexa picks 1 or 2, Memory cannot win. Thus, there are $3+2+1=6$ possible games in which Memory wins.