NOI '99 P1 - 01 Sequence

Time limit: 0.6s **Memory limit:** 16M

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Given 7 positive integers N, A_0, B_0, L_0, A_1, B_1, L_1, determine a 01 sequence $S = s_1 s_2 \ldots s_i \ldots s_N$, such that:

1. $s_i = 0$ or $s_i = 1$ for $1 \leq i \leq N$.
2. For any of S's length L_0 consecutive subsequence $s_j s_{j+1} \ldots s_{j+L_0-1}$, the number of 0's must be between A_0 and B_0, inclusive.
3. For any of S's length L_1 consecutive subsequence $s_j s_{j+1} \ldots s_{j+L_1-1}$, the number of 1's must be between A_1 and B_1, inclusive.

For example, if $N = 6$, $A_0 = 1$, $B_0 = 2$, $L_0 = 3$, $A_1 = 1$, $B_1 = 1$, $L_1 = 2$, then a sequence that satisfies the above conditions is $S = 010101$.

Input Specification

The input will consist of one line with 7 space-separated positive integers, the values N, A_0, B_0, L_0, A_1, B_1, L_1 $(3 \leq N \leq 1\,000, 1 \leq A_0 \leq B_0 \leq L_0 \leq N, 1 \leq A_1 \leq B_1 \leq L_1 \leq N)$.

Output Specification

The output should consist of one line. If there does not exist a 01 sequence satisfying the above conditions, then output `-1`. Otherwise, output any 01 sequence that satisfies the conditions.

Sample Input

```
6 1 2 3 1 1 2
```

Sample Output

```
010101
```

Problem translated to English by **Alex**.