

Multiplying Two Positive Integers

Time Limit: 2 seconds

Problem Description

Given four positive integers x , y , i , and j . Print the i -th, $(i + 1)$ -th, \dots , j -th digits of xy .

Technical Specifications

1. The number of test cases would be less than or equal to 20.
2. $0 < x < 10^{20000}$ and $0 < y < 10^{20000}$.
3. $0 < i \leq j \leq \lceil \log(xy + 1) \rceil$.

Input Format

The first line of the input file contains an integer indicating the number of test cases. Each test case contains four integers x , y , i , and j , separated by spaces.

Output Format

For each test case, print the i -th, $(i + 1)$ -th, \dots , j -th digits of xy in a line.

Sample Input

```
4
10 73 1 1
10 72 1 2
10 81 2 3
100000123456789 654321098765 17 22
```

Sample Output

```
7
72
10
847876
```