

# The Safest Path

## Problem Description

We are going to deliver some confidential documents from city  $s$  to city  $t$ . For each road  $r$  which connects two cities, there is a safety factor which is a floating point number  $s(r)$  (between 0 and 1) indicating the level of safety of the road  $r$ . We hope to find the safest path such that we can send the confidential documents from  $s$  to  $t$  through this path. The safety factor of a path  $P$  is defined as  $Safe(P) = s(e_1) * s(e_2) * \dots * s(e_k)$ , where  $e_k$  denotes the edge on the path  $P$ .

## INPUT

There are multiple cases.

For each case, the first line contains three integers  $n, s, t$  (the vertices are labelled from 1 to  $n$  and  $n \leq 200$ ) which denote the number of cities, source city and destine city respectively.

Then following is an  $n$  by  $n$  matrix representing the safety factor between any two cities (The matrix is symmetric).

## OUTPUT

For each test case, output the safety factor (rounded to three decimal places) of the safest path from city  $s$  to city  $t$ . If the safety factor is equal to 0, output "DANGER!".

## SAMPLE INPUT

```
3 1 2
1 0.5 0.5
0.5 1 0.4
0.5 0.4 1
```

## SAMPLE OUTPUT

```
0.500
```