

Problem E. 5-Path

Input file: *standard input*
Output file: *standard output*
Time limit: 1 second
Memory limit: 256 mebibytes

You are given a list of edges of an undirected graph. There are two special nodes in the graph: a and b . Find the minimum size of a prefix of this list such that a graph represented by this prefix includes a simple path of 5 edges between nodes a and b .

Input

The first line of input contains two integers n and m : the number of nodes and the number of edges in the graph, respectively ($1 \leq n \leq 10^5$, $1 \leq m \leq 2 \cdot 10^5$).

Each of the following m lines contains two integers v_i and u_i which describe two endpoints of an edge ($1 \leq v_i, u_i \leq n$).

The last line contains two integers a and b : the numbers of special nodes ($a \neq b$, $1 \leq a, b \leq n$).

The graph has no multiple edges and no self-loops.

Output

If there is a simple path of 5 edges in the graph represented by the given edge list, output the answer to the problem. Otherwise, output -1 .

Examples

standard input	standard output
10 9 1 6 6 9 9 10 10 3 3 2 2 7 7 5 5 8 8 4 6 7	6
10 10 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 10 2 10 3 1 10	-1