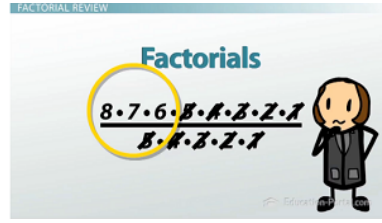
For the purpose of this problem, we will define a "factorial product" to be a multiplication of several factorials of single digit numbers.

For example, the expression 5! * 3! * 4! * 3! is a product of four factorials, where each factorial is generated by a single digit. Given two factorial products, are they equal?



Input

The input will contain multiple test cases (at most 450). Each case starts with two integers N and M on a line ($1 \leq N, M \leq 1,000$), the number of factors in each factorial product. The next line contains N digits, each digit being between 0 and 9 inclusive, specifying the generators of the N factorial factors in the first product. The third line contains M digits, also between 0 and 9, specifying the generators of the M factorial factors in the second product.

For instance 5! * 3! * 4! * 3! would be given as '`5 3 4 3`'.

Input will end with a line containing two zeroes.

Output

For each expression print on a separate line either '`YES`' or '`NO`', the answer to the question "Are the two factorial products equal?"

Sample Input

```
1 1
9
9
1 2
5
3 6
0 0
```

Sample Output

```
YES
NO
```