Problem #2

Prime Numbers

So far it is mathematically impossible to write a formula to generate prime-numbers exclusively. But we do know how to check for prime numbers, as prime numbers are numbers that can only be divided by themselves and by 1.

Write a program that takes an integer as input x and an output option {MAX,ALL}. Your program should calculate all of the prime numbers up to x and display the output according to the output option.

Input

1) An integer x, such that 1 <= x <= infinity
2) An option, MAX or ALL

if option==MAX
    Output
        The largest prime number in the sequence S ={1,2,3,...,x}
if option==ALL
    Output
        S

        [Note: Do not count 0 and 1 as prime numbers.]

Examples

Input:
> 10 MAX

Output:
7

Input:
> 10 ALL

Output:
2 3 5 7