

How fast can news go (100 points)

Introduction

The annual fiscal report of Bloomberg has been released and a magnificent growth in revenue and profit is shown. You want to share this information with others to increase exposure to it in your and everyone else's portfolio based on this information. However, you have only one unicast communication channel and it takes **T** seconds to communicate this information to another person. You will pass along this information to **K** people sequentially due to a communication constraint. Then each of the persons who receives this message will do the exact same thing. How long will it take for this information to be distributed to **N** people including yourself?

Assume that you will get this information at second 0 and the 2nd person will get the news after **T** seconds.

Input Specifications

You will be given a line with three positive integers delimited by spaces: **N**, **K** and **T**.

Output Specifications

Your output will be the time in seconds it would take.

Sample Input/Output

Input

5
2
1

Output

3

Explanation

You receive the news (0s), pass it to person 2 (1s), then you pass to person 3 at the same time person 2 passes to person 4 (2s). Person 2 passes to person 5 (3s).

Input

33
1
1

Output

32

Explanation

Each person can pass to only one other person and since you have the news at 0s, it will take 32 seconds to transmit the news to the other 32 people.