A. Cheap Travel

time limit per test: 1 second
memory limit per test: 256 megabytes
input: standard input
output: standard output

Ann has recently started commuting by subway. We know that a one ride subway ticket costs a rubles. Besides, Ann found out that she can buy a special ticket for m rides (she can buy it several times). It costs b rubles. Ann did the math; she will need to use subway n times. Help Ann, tell her what is the minimum sum of money she will have to spend to make n rides?

Input

The single line contains four space-separated integers n, m, a, b ($1 \le n, m, a, b \le 1000$) — the number of rides Ann has planned, the number of rides covered by the m ride ticket, the price of a one ride ticket and the price of an m ride ticket.

Output

Print a single integer — the minimum sum in rubles that Ann will need to spend.

Examples

input
6 2 1 2
output
6

input
5 2 2 3
output
8

Note

In the first sample one of the optimal solutions is: each time buy a one ride ticket. There are other optimal solutions. For example, buy three m ride tickets.