Problem G
Fading Wind

Time Limit: 1 sec

You're competing in an outdoor paper airplane flying contest, and you want to predict how far your paper airplane will fly. Your design has a fixed factor k, such that if the airplane's velocity is at least k, it will rise. If its velocity is less than k it will descend.

Here is how your paper airplane will fly:

- You start by throwing your paper airplane with a horizontal velocity of v at a height of h. There is an external wind blowing with a strength of s.
- While $h > 0$, repeat the following sequence:
  - Increase v by s. Then, decrease v by $\max(1, \lfloor \frac{v}{10} \rfloor)$. Note that $\lfloor \frac{v}{10} \rfloor$ is the value of $\frac{v}{10}$, rounded down to the nearest integer if it is not an integer.
  - If $v \geq k$, increase h by one.
  - If $0 < v < k$, decrease h by one. If h is zero after the decrease, set v to zero.
  - If $v \leq 0$, set h to zero and v to zero.
  - Your airplane now travels horizontally by v units.
  - If $s > 0$, decrease it by 1.

Compute how far the paper airplane travels horizontally.

Input

The single line of input contains four integers h, k, v, and s ($1 \leq h, k, v, s \leq 10^3$), where h is your starting height, k is your fixed factor, v is your starting velocity, and s is the strength of the wind.

Output

Output a single integer, which is the distance your airplane travels horizontally. It can be shown that this distance is always an integer.

Sample Input 1	Sample Output 1
1 1 1 1	1

Sample Input 2	Sample Output 2
2 2 2 2	9

Sample Input 3	Sample Output 3
1 2 3 4	68

Sample Input 4	Sample Output 4
314 159 265 358	581062