

# Halloween Sale



You wish to buy video games from the famous online video game store Mist.

Usually, all games are sold at the same price,  $p$  dollars. However, they are planning to have the seasonal Halloween Sale next month in which you can buy games at a cheaper price. Specifically, the first game you buy during the sale will be sold at  $p$  dollars, but every subsequent game you buy will be sold at exactly  $d$  dollars less than the cost of the previous one you bought. This will continue until the cost becomes less than or equal to  $m$  dollars, after which every game you buy will cost  $m$  dollars each.

For example, if  $p = 20$ ,  $d = 3$  and  $m = 6$ , then the following are the costs of the first 11 games you buy, in order:

20, 17, 14, 11, 8, 6, 6, 6, 6, 6, 6

You have  $s$  dollars in your Mist wallet. How many games can you buy during the Halloween Sale?

## Input Format

The first and only line of input contains four space-separated integers  $p$ ,  $d$ ,  $m$  and  $s$ .

## Constraints

- $1 \leq m \leq p \leq 100$
- $1 \leq d \leq 100$
- $1 \leq s \leq 10^4$

## Output Format

Print a single line containing a single integer denoting the maximum number of games you can buy.

## Sample Input 0

```
20 3 6 80
```

## Sample Output 0

```
6
```

## Explanation 0

We have  $p = 20$ ,  $d = 3$  and  $m = 6$ , the same as in the problem statement. We also have  $s = 80$  dollars. We can buy 6 games since they cost  $20 + 17 + 14 + 11 + 8 + 6 = 76$  dollars. However, we cannot buy a 7th game. Thus, the answer is 6.

## Sample Input 1

```
20 3 6 85
```

## Sample Output 1

```
7
```

## Explanation 1

This is the same as the previous case, except this time we have  $s = 85$  dollars. This time, we can buy 7

games since they cost  $20 + 17 + 14 + 11 + 8 + 6 + 6 = 82$  dollars. However, we cannot buy an 8th game. Thus, the answer is 7.