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 will cost p dollars, and every subsequent game will cost d dollars less than the previous one. This continues until the cost becomes less than or equal to m dollars, after which every game will cost m dollars. How many games can you buy during the Halloween Sale?

Example
$p = 20$
$d = 3$
$m = 6$
$s = 70$.

The following are the costs of the first 11, in order:

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

Start at $p = 20$ units cost, reduce that by $d = 3$ units each iteration until reaching a minimum possible price, $m = 6$. Starting with $s = 70$ units of currency in your Mist wallet, you can buy 5 games: $20 + 17 + 14 + 11 + 8 = 70$.

Function Description

Complete the *howManyGames* function in the editor below.

howManyGames has the following parameters:

- *int p:* the price of the first game
- *int d:* the discount from the previous game price
- *int m:* the minimum cost of a game
- *int s:* the starting budget

Input Format

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

Constraints

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

Sample Input 0

```
20 3 6 80
```

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Sample Output 0

```
6
```

Explanation 0

Assumptions other than starting funds, s, match the example in the problem statement. With a budget of 80, you can buy 6 games at a cost of $20 + 17 + 14 + 11 + 8 + 6 = 76$. A 7^{th} game for an additional 6 units exceeds the budget.

Sample Input 1

```
20 3 6 85
```

Sample Output 1

```
7
```

Explanation 1

This is the same as the previous case, except this time the starting budget $s = 85$ units of currency. This time, you can buy 7 games since they cost $20 + 17 + 14 + 11 + 8 + 6 + 6 = 82$. An additional game at 6 units will exceed the budget.

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