

Question 1

Correct

Marked out of 10.00

Given,

the total levels (rows) in a hill pattern as input1,

the weight of the head level (first row) as input2, and

the weight increments of each subsequent row as input3.

You are expected to find the TOTAL weight of the hill pattern.

"Total levels" represents the number of rows in the pattern.

"Head level" represents the first row.

"Weight of a level" represents the value of each star (asterisk) in that row.

Note that the first row will have the weight of the head level, and the weight of each subsequent row will keep increasing by the specified "weight increment".

The hill patterns will always be of the below format, starting with 1 star * at head level and increasing 1 star at each level till level N. From the second level (second row) a hash # also gets added to the pattern.

```
*
*#*
*#*#*
*#*#*#*
*#*#*#*#*
... and so on till level N.
```

While the weight of a start * is equal to the weight of the current level (current row), the weight of the hash # is equal to the weight of the previous level (previous row).

Let us see a couple of examples:

Example 1:

Given,

the total levels (total rows) in a hill pattern = 5 (input1)

the weight of the head level (first row) = 10 (input2)

the weight increments of each subsequent level = 2 (input3)

Then, the total weight of the hill pattern will be calculated as = $10 + (12 + 10 + 12) + (14 + 12 + 14 + 12 + 14) + (16 + 14 + 16 + 14 + 16 + 14 + 16) + (18 + 16 + 18 + 16 + 18 + 16 + 18 + 16 + 18) = 10 + 34 + 66 + 106 + 154 = 370$

Example 2:

Given,

the total levels (total rows) in a hill pattern = 4 (input1)

the weight of the head level (first row) = 1 (input2)

the weight increments of each subsequent level = 5 (input3)

Then, the total weight of the hill pattern will be = $1 + (6 + 1 + 6) + (11 + 6 + 11 + 6 + 11) + (16 + 11 + 16 + 11 + 16 + 11 + 16) = 1 + 13 + 45 + 97 = 156$

Observe the weight of star *: Please observe that the weight of star * in first row is 10, in second row it increases by 2 and becomes 12, in third row it increases by 2 and becomes 14, in fourth row it increases by 2 and becomes 16 and so on . . .

Observe the weight of hash #: Please observe that the weight of hash # in each row is equal to the weight of the star * in the previous row.

For example:

Input	Result
5	370
10	
2	

Input	Result
4 1 5	156

Answer: (penalty regime: 0 %)

```

1 def cal_hill(N,W,I):
2     total_weight=0
3     prev_start_weight=W
4     for row in range(1,N+1):
5         current_start_weight=W+(row-1)*I
6         num_stars=row
7         num_hashes=row-1
8         row_weight=(num_stars*current_start_weight)+(num_hashes*prev_start_weight)
9         total_weight+=row_weight
10        prev_start_weight=current_start_weight
11    return total_weight
12 N=int(input())
13 W=int(input())
14 I=int(input())
15 print(cal_hill(N,W,I))

```

	Input	Expected	Got	
✓	5 10 2	370	370	✓
✓	4 1 5	156	156	✓

Passed all tests! ✓