MR. HONEST

Oleh: Jason Kumarkono

Time Limit	1 s
Memory Limit	256 MB

Rico adalah seseorang yang sangat jujur. Suatu hari, ia memulai bisnis dengan temannya yang bernama Wancoy.

Awalnya, mereka sepakat bahwa pertumbuhan penjualan harian bisnis mereka, jika dihitung dengan **jujur**, akan mengikuti sebuah pola deret **J(n)**.
Deret **J(n)** didefinisikan sebagai berikut:

- J(0) = i (penjualan hari ke-0)
- J(1) = j (penjualan hari ke-1)
- J(n) = J(n-1) + J(n-2) (untuk n > 1)

Namun, karena satu dan lain hal, Rico terpaksa melakukan kecurangan untuk memanipulasi laporan keuangan. Ia membuat laporan versinya sendiri, yaitu deret **R(n)**.

Setiap hari (mulai hari ke-2), Rico mengurangi penjualan yang seharusnya dilaporkan hari itu sebanyak **k**.
Deret **R(n)** didefinisikan sebagai berikut:

- R(0) = i (Rico belum curang di hari ke-0)
- R(1) = j (Rico juga belum curang di hari ke-1)
- R(n) = R(n-1) + R(n-2) - k (untuk n > 1)

Bantu Rico untuk menghitung total selisih laporan jujur dan laporan curangnya.

FORMAT MASUKAN

Inputan berupa **bilangan bulat N, i, j, dan k**

- i sebagai jumlah penjualan di hari ke-0 (n = 0)
- j sebagai jumlah penjualan di hari ke-1 (n = 1)
- k sebagai jumlah konstan pengurangan barang terjual
- N sebagai hari ke-n

FORMAT KELUARAN

Satu bilangan bulat selisih dari J(N) dan R(N).

BATASAN

$\mathbf{0 \leq N \leq 20}$
$\mathbf{0 \leq i, j \leq 10^{10}}$
$\mathbf{0 \leq k \leq 10^{10}}$

CONTOH MASUKAN #1

7 5 7 2

CONTOH KELUARAN #1

40

PENJELASAN #1

J(0) = 5 J(1) = 7 J(2) = 7 + 5 = 12 J(3) = 12 + 7 = 19 J(4) = 19 + 12 = 31 J(5) = 31 + 19 = 50 J(6) = 50 + 31 = 81 J(7) = 81 + 50 = 131	R(0) = 5 R(1) = 7 R(2) = 7 + 5 - 2 = 10 R(3) = 10 + 7 - 2 = 15 R(4) = 15 + 10 - 2 = 23 R(5) = 23 + 15 - 2 = 36 R(6) = 36 + 23 - 2 = 57 R(7) = 57 + 36 - 2 = 91
131 - 91 = 40	

CONTOH MASUKAN #2

5 10 12 22

CONTOH KELUARAN #2

154

PENJELASAN #2

J(0) = 10 J(1) = 12 J(2) = 12 + 10 = 22 J(3) = 22 + 12 = 34 J(4) = 34 + 22 = 56 J(5) = 56 + 34 = 90	R(0) = 10 R(1) = 12 R(2) = 12 + 10 - 22 = 0 R(3) = 0 + 12 - 22 = -10 R(4) = -10 + 0 - 22 = -32 R(5) = -32 + -10 - 22 = -64
90 - (-64) = 154	

NOTES:

WAJIB PAKAI REKURSI

MR. HONEST

Author: Jason Kumarkono

Time Limit	1 s
Memory Limit	256 MB

Rico was a very honest person. One day, he started a business with his friend, Wancoy.

Initially, they agreed that their business's daily sales growth, if calculated honestly, would follow a sequence J(n).

The sequence J(n) is defined as follows:

- J(0) = i (sales on day 0)
- J(1) = j (sales on day 1)
- J(n) = J(n-1) + J(n-2) (for n > 1

However, due to certain circumstances, Rico was forced to cheat to manipulate the financial reports. He created his own version of the report, a sequence R(n).

Every day (starting from day 2), Rico reduces the sales that should have been reported by k.

The sequence R(n) is defined as follows:

- R(0) = i (Rico has not cheated on day 0)
- R(1) = j (Rico also has not cheated on day 1)
- R(n) = R(n-1) + R(n-2) - k (for n > 1)

Help calculate the total difference between the honest report and his fraudulent report.

INPUT FORMAT

The input consists of four integers: N, i, j, and k.

- i is the number of sales on day 0 (n = 0)
- j is the number of sales on day 1 (n = 1)
- k is the constant amount subtracted from the sales
- N is the target day n

OUTPUT FORMAT

A single integer representing the difference between J(N) and R(N).

CONSTRAINTS

$0 \leq N \leq 20$
$0 \leq i, j \leq 10^{10}$
$0 \leq k \leq 10^{10}$

CONTOH MASUKAN #1

7 5 7 2

CONTOH KELUARAN #1

40

PENJELASAN #1

J(0) = 5 J(1) = 7 J(2) = 7 + 5 = 12 J(3) = 12 + 7 = 19 J(4) = 19 + 12 = 31 J(5) = 31 + 19 = 50 J(6) = 50 + 31 = 81 J(7) = 81 + 50 = 131	R(0) = 5 R(1) = 7 R(2) = 7 + 5 - 2 = 10 R(3) = 10 + 7 - 2 = 15 R(4) = 15 + 10 - 2 = 23 R(5) = 23 + 15 - 2 = 36 R(6) = 36 + 23 - 2 = 57 R(7) = 57 + 36 - 2 = 91
131 - 91 = 40	

CONTOH MASUKAN #2

5 10 12 22

CONTOH KELUARAN #2

154

PENJELASAN #2

J(0) = 10 J(1) = 12 J(2) = 12 + 10 = 22 J(3) = 22 + 12 = 34 J(4) = 34 + 22 = 56 J(5) = 56 + 34 = 90	R(0) = 10 R(1) = 12 R(2) = 12 + 10 - 22 = 0 R(3) = 0 + 12 - 22 = -10 R(4) = -10 + 0 - 22 = -32 R(5) = -32 + -10 - 22 = -64
90 - (-64) = 154	

NOTES:

A recursive solution is required.