Sesi Tutor Dengan Baldi

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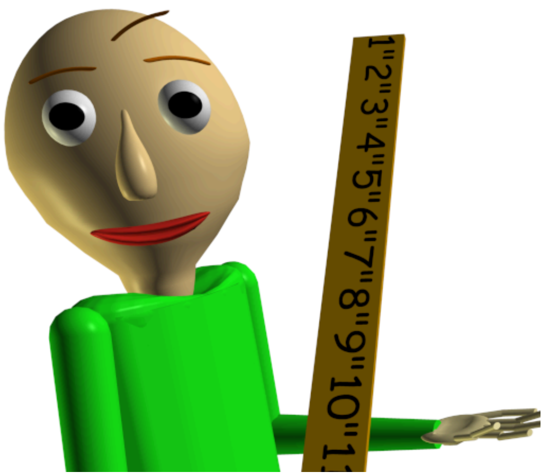

Baldi merupakan guru yang baik hati, ia ingin mengevaluasi kemampuanmu dalam mengimplementasi teknik rekursif pada suatu permasalahan matematika ke dalam kodingan. Berikut adalah permasalahan matematika yang ingin diimplementasikan:

$$F(X, N) = f(x + g(x + f(x + g(x + f(x + \dots)))))$$

Fungsi terdalam adalah f(x), sebagai contoh apabila jumlah fungsinya (N) ditentukan:

Jika N = 3, $f(x + g(x + f(x)))$

Jika N = 4, $g(x + f(x + g(x + f(x))))$

Dengan trik tambahan yakni untuk setiap fungsi memiliki rumusnya masing-masing:

$$f(x) = \begin{cases} \frac{1}{2}x, & if\ x\ is\ even \\ 2x, & if\ x\ is\ odd \end{cases} \qquad g(x) = \begin{cases} x + 2, & if\ x\ is\ even \\ x - 2, & if\ x\ is\ odd \end{cases}$$

Selesaikan permasalahan menggunakan **REKURSIF**, jika tidak maka baldi akan marah!

Input

Terdapat dua buah integer **X** dan **N** yang secara berurutan menentukan nilai dari x dan jumlah fungsi yang terdapat pada permasalahan.

Output

Sebuah integer hasil dari F(X,N)

Constraint

$-2^{31} < X < 2^{31}$

$1 \leq N \leq 1000$

Sample

Input

```
1 5
```

Output

```
10
```

Explanation

Initial	**Proses**	**Result**
f(x+g(x+f(x+g(x+f(x)))))	substitusi x → 1	f(1+g(1+f(1+g(1+f(1)))))
f(1+g(1+f(1+g(1+f(1)))))	f(1) = 2 (1 ganjil maka return 2*x)	f(1+g(1+f(1+g(1+2))))
f(1+g(1+f(1+g(3))))	g(3) = 1 (3 ganjil maka return x-2)	f(1+g(1+f(1+1)))
f(1+g(1+f(2)))	f(2) = 1 (2 genap maka return ½ x)	f(1+g(1+1))
f(1+g(2))	g(2) = 4 (2 genap maka return x+2)	f(1+4)
f(5)	f(5) = 10 (5 ganjil maka return 2*x)	10

Tutor Session With Baldi

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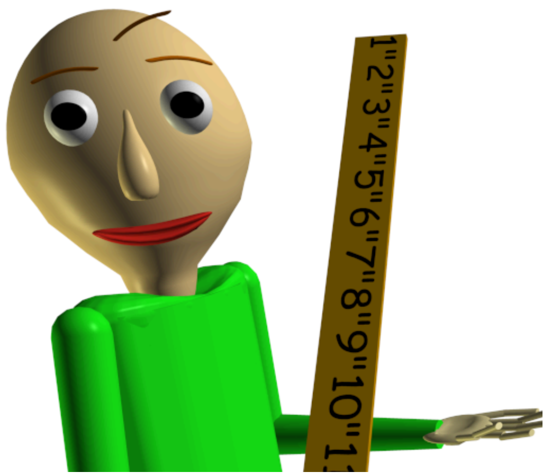

Baldi is a kind-hearted teacher, and he wants to evaluate your ability to implement recursive techniques on a mathematical problem into code. Below is the mathematical problem he wants you to implement:

$$F(X, N) = f(x + g(x + f(x + g(x + f(x + ...)))))$$

The innermost function is f(x). For example, when the total number of functions (N) is given:

If N = 3, $\quad f(x + g(x + f(x)))$

If N = 4, $\quad g(x + f(x + g(x + f(x))))$

With an additional trick, where each function has its own formula:

$$f(x) = \begin{cases} \frac{1}{2}x, & if\ x\ is\ even \\ 2x, & if\ x\ is\ odd \end{cases} \qquad g(x) = \begin{cases} x + 2, & if\ x\ is\ even \\ x - 2, & if\ x\ is\ odd \end{cases}$$

Solve the problem using **RECURSION**, otherwise Baldi will be angry!

Input

There are two integers **X** and **N**, which sequentially determine the value of x and the number of functions in the problem.

Output

An integer from the result of F(X,N)

Constraint

$-2^{31} < X < 2^{31}$

$1 \leq N \leq 1000$

Sample

Input

```
1 5
```

Output

```
10
```

Explanation

Initial	**Proses**	**Result**
f(x+g(x+f(x+g(x+f(x)))))	Substitute x → 1	f(1+g(1+f(1+g(1+f(1)))))
f(1+g(1+f(1+g(1+f(1)))))	f(1) = 2 (1 is odd, so return 2*x)	f(1+g(1+f(1+g(1+2)))
f(1+g(1+f(1+g(3)))	g(3) = 1 (3 is odd, so return x-2)	f(1+g(1+f(1+1))
f(1+g(1+f(2))	f(2) = 1 (2 is even, so return ½ x)	f(1+g(1+1))
f(1+g(2))	g(2) = 4 (2 is even, so return x+2)	f(1+4)
f(5)	f(5) = 10 (5 is odd, so return 2*x)	10