Problem C. Spiral

```
Input file:       standard input
Output file:      standard output
Time limit:       2 seconds
Memory limit:     1024 megabytes
```

An infinite sheet of graph paper is filled with the sequence of positive integers written down on a spiral. An example of the beginning of one such spiral (there are several possible directions):

37	36	35	34	33	32	31
38	17	16	15	14	13	30
39	18	5	4	3	12	29
40	19	6	1	2	11	28
41	20	7	8	9	10	27
42	21	22	23	24	25	26
43	44	45	46	47	48	...

The coordinates of the starting point of the spiral and the spiral's direction are not known. It is known, however, that the cell $(0, 0)$ contains the value A. What is the maximal possible value in the cell (x, y)?

Input

The first line of input contains the value A, a positive integer not exceeding 10^8. The second line contains two integers x and y, the coordinates of the cell we're interested in ($|x|, |y| \leq 10^8$).

Output

Output a single integer, the maximal value that could be in the cell (x, y).

Examples

spiral.in	spiral.out
16 1 6	251
16 16 16	1296