Lazy Cuts

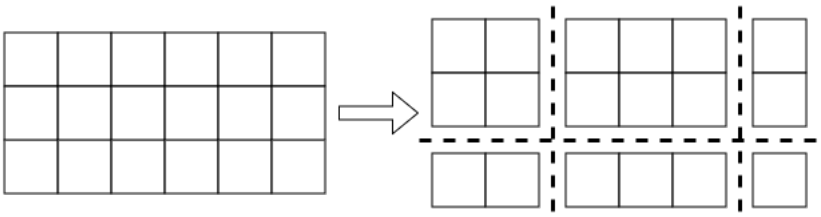
Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	512 megabytes

Anton needs to bring s squares to school for his craft lesson. Anton is very lazy, but he loves craft lessons, so he is willing to make the minimum necessary number of cuts.

At home, Anton found a sheet of grid paper sized $n \times m$, with $s \leq n \cdot m$. Anton also has a laser cutter that works as follows:

1. The original sheet of paper is placed in the cutter.
2. The cutter makes x straight vertical cuts along the edges of the squares.
3. The cutter makes y straight horizontal cuts along the edges of the squares.
4. The cutter produces $(x + 1) \cdot (y + 1)$ new sheets of paper.

For example, from a 3×6 sheet, three cuts can produce six sheets with areas 4, 2, 6, 2, 1, and 3.



Since Anton is lazy, he wants to make the minimum possible number of cuts so that from the sheets produced by the cutter, he can collect a set with a total area of exactly s squares to bring to school for his craft lesson.

Anton is afraid of overworking while using the cutter, so he asks you to help determine the minimum possible number of cuts he will have to make.

Input

The input consists of a single line containing three integers n, m, and s — the dimensions of the original sheet of grid paper and the required number of squares for the class ($1 \leq n, m \leq 10^5$, $1 \leq s \leq n \cdot m$).

Output

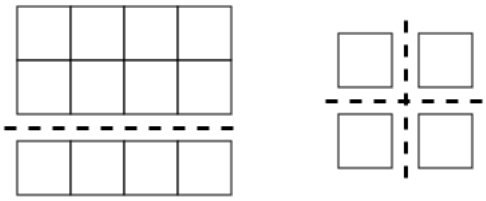
Output a single integer — the minimum possible number of cuts needed so that it is possible to collect a set with a total area of exactly s squares from the resulting sheets of paper.

Examples

standard input	standard output
3 4 8	1
2 2 3	2
10 9 90	0

Note

The image below shows examples of cuts for the first two tests from the example.



In the third test from the example, $s = n \cdot m$, so no cuts are needed.