Problem J3: Sumac Sequences

Problem Description

In a sumac sequence, $t_1, t_2, .., t_m$, each term is an integer greater than or equal 0. Also, each term, starting with the third, is the difference of the preceding two terms (that is, $t_{n+2} = t_n - t_{n+1}$ for $n \geq 1$). The sequence terminates at t_m if $t_{m-1} < t_m$.

For example, if we have 120 and 71, then the sumac sequence generated is as follows:

$$120, 71, 49, 22, 27.$$

This is a sumac sequence of length 5.

Input Specification

The input will be two positive numbers t_1 and t_2, with $0 < t_2 < t_1 < 10000$.

Output Specification

The output will be the length of the sumac sequence given by the starting numbers t_1 and t_2.

Sample Input

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120
71
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Output for Sample Input

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5
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