Garland

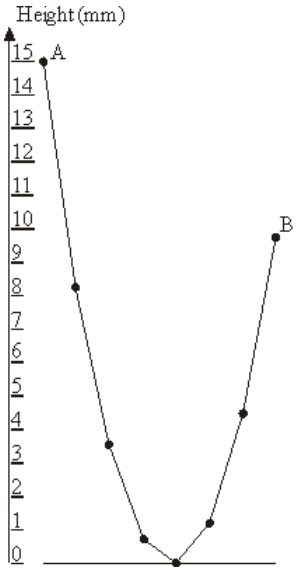
The New Year garland consists of N lamps attached to a common wire that hangs down on the ends to which outermost lamps are affixed. The wire sags under the weight of lamp in a particular way: each lamp is hanging at the height that is 1 millimeter lower than the average height of the two adjacent lamps.

The leftmost lamp is hanging at the height of A millimeters above the ground. You have to determine the lowest height B of the rightmost lamp so that no lamp in the garland lies on the ground though some of them may touch the ground.

You shall neglect the lamp's size in this problem. By numbering the lamps with integers from 1 to N and denoting the i^{th} lamp height in millimeters as $H - i$ we derive the following equations:

$H_1 = A$
$H_i = (H_{i-1} + H_{i+1})/2 - 1$, for all $1 < i < N$
$H_N = B$
$H_i \geq 0$, for all $1 \leq i \leq N$

The sample garland with 8 lamps that is shown on the picture has $A = 15$ and $B = 9.75$.



Input Format

The input consists of a single line with two numbers N and A separated by a space. N is an integer representing the number of lamps in the garland, A is a real number representing the height of the leftmost lamp above the ground in millimeters.

Constraints

$3 \leq N \leq 1000$
$10 \leq A \leq 1000$

Output Format

Write to the output the single number B representing the lowest possible height of the rightmost lamp. Your answer must be within 0.005 absolute error of the actual result.

Sample Input 0

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8 15
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Sample Output 0

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9.75
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Sample Input 1

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692 532.81
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Sample Output 1

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446113.344348
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