

## C. Font Size

Time limit: 0.5s

Memory limit: 1536 MB

**Description**

John bought a billboard. He knows what text he wants to put on it, and he has chosen a monospace font to use, but he doesn't know what the font size should be.

Naturally, John wants to use the largest font size possible.

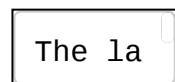
Sizing works as follows:

- The height of a line is the font size.
- The width of a character is two-thirds of the font size.
- Lines can only break between the space-separated words.
- If a space ever falls at the beginning or end of a line, it is omitted.

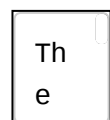
Don't worry about details like kerning and line spacing.

For example, consider the message "The lazy brown dog".

On a billboard 60 inches wide and 25 inches tall, the maximum font size is 10 inches:



On a billboard 50 inches wide and 50 inches tall, the maximum size is 12.5 inches:



Given the size of the billboard and the message, find the largest font size that will allow the entire message to fit.

**Input**

The first line is the width of the billboard in inches,  $0 \leq W \leq 7500$ , and the height of the billboard in inches,  $0 \leq H \leq 7500$ .

The third line is the non-empty message, which is comprised of alphanumeric words separated by single spaces. The message is most 10,000 characters long.

**Output**

Print the maximum possible font size, in inches. Your answer must be accurate to within 0.001 of the actual value.

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**Input****Input**

60 25

The lazy brown dog

50 50

The lazy brown dog

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**Output**

10

**Output**

12.5