

Probability Distribution 2

In probability theory, the ***normal distribution*** is the very common probability distribution that is widely used in science to describe real-world random variables whose distribution is not known. In this problem, we are going to take the simplest case: **standard normal distribution**.

The probability density function of the standard normal distribution is:

$$f(x) = \frac{1}{\sqrt{2\pi}} e^{-\frac{1}{2}x^2}$$

With the probability density function, we can calculate the probability of x being larger than or equal to A , and less than or equal to B ($A \leq B$), by integrating the probability density function.

$$P(A \leq x \leq B) = \int_A^B f(x) dx$$

In this problem, you are given the values of A and B . Please write a program that calculates the value of $P(A \leq x \leq B)$.

Input

Your input consists of an arbitrary number of lines, but no more than 500.

Each line consists of A ($-4 \leq A \leq 4$) and B ($-4 \leq B \leq 4$). These numbers are *not guaranteed to be an integer*. It is guaranteed that you can store these values just by reading these in a double-type variable.

The end of input is indicated by a line containing only the value -1 .

Output

For each input line, print a line that contains the value of $P(A \leq x \leq B)$. Print 3 digits after the decimal point. (you may round your output or not, we rounded our output)

Your output will be considered correct if $|(your\ answer) - (our\ answer)| \leq 10^{-3}$.

Example

Standard input	Standard output
0.12345 1.58491	0.394
2.5 1.0	0.000
2.718 3.14159	0.002

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Time Limit

1 second.