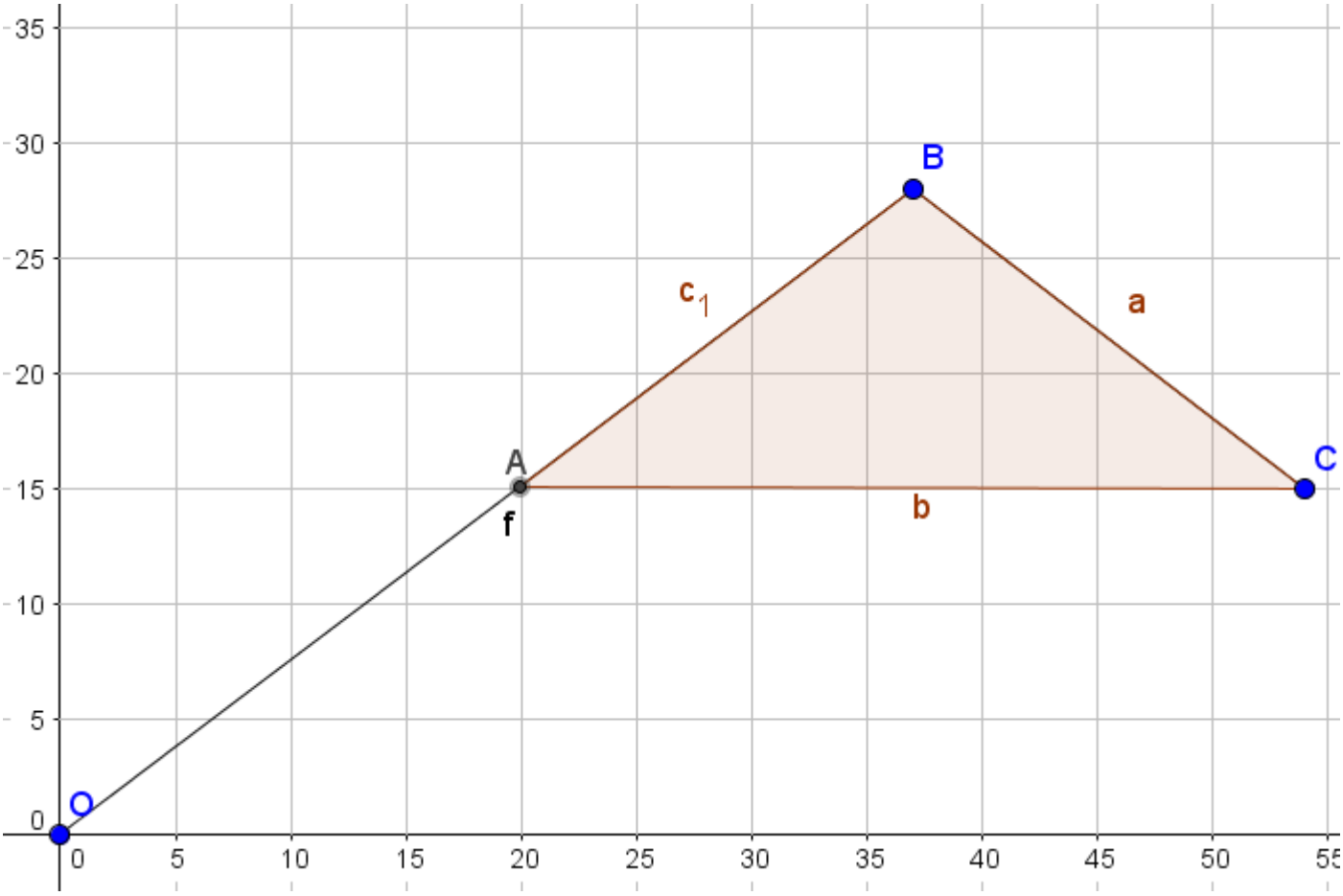
Flag Design

Input file:	`standard input`
Output file:	`standard output`
Time limit:	2 seconds
Memory limit:	256 megabytes

You are asked to design the national flag of the new country AI-land (Almost-Isosceles land). Your flag should look like an almost-isosceles triangle attached to a flagpole.



Here are the detailed specifications of the flag design (refer to diagram above):

- OA is of **positive integer** length.
- As ABC is almost isosceles, we want $|AB - BC| > 0$ but $|AB - BC|$ to be as small as possible.
- OB is the flagpole, so O, A, B are collinear.
- B and C are **lattice points** (points with integer coordinates).
- C lies at the bottom-right of B, i.e. C has a smaller y-coordinate than B, but has a larger x-coordinate than B.
- The x-coordinate of B and C are positive, and the y-coordinate of B is positive. **The absolute value of the coordinates of B and C must not exceed $3 \cdot 10^8$.**
- Your flag must be slanted at a certain slope. Formally, the absolute value of the slope of AB and slope of BC is between m and $m + 0.1$ inclusive.

Here, O denotes the origin.

Can you design a flag for AI-land?

Input

The input contains a single real number, m ($0 \leq m \leq 4.9$). m is given to **exactly one decimal place** (e.g. 0.0, 1.9, 4.1).

Output

Output 4 space-separated integers, x_B, y_B, x_C, y_C, where (x_B, y_B) and (x_C, y_C) are the coordinates of B and C respectively. You must ensure that B and C satisfies all the conditions of the statement. Note that you do not have to specify A: the judge will find the best possible point A that fits your given pair of B and C.

Scoring

There are 50 possible testcases in this problem. Your score for this problem is the **minimum** score over all testcases.

For each testcase, you get a score depending on the value of $|AB - BC|$ in your output.

If $AB = BC$, you get 0 points.

Otherwise, let $\epsilon = |AB - BC|$.

If $\epsilon > 10^{-4}$, you get 0 points.

If $10^{-7} < \epsilon \leq 10^{-4}$, you get $-3(\log_{10} \epsilon + 4)$ points (so the maximum score here is 9 points).

If $10^{-9} < \epsilon \leq 10^{-7}$, you get $9 - 10.5(\log_{10} \epsilon + 7)$ points (so the maximum score here is 30 points).

If $10^{-11} < \epsilon \leq 10^{-9}$, you get $30 - 35(\log_{10} \epsilon + 9)$ points (so the maximum score here is 100 points).

If $\epsilon \leq 10^{-11}$, you get 100 points.

Example

standard input	standard output
0.7	37 28 54 15

Note

The sample output corresponds to the diagram in the problem statement. Note that $OA = 25$ is a positive integer. Also, the slope of AB is $\frac{28}{37} \approx 0.757$ and the slope of BC is $-\frac{13}{17} \approx -0.765$, so their absolute values are in the range $[0.7, 0.8]$. Finally, we have $|AB - BC| \approx 0.0005$. Unfortunately, this output will get 0 points based on the scoring system.

Additionally, you may find the program `flag-design-helper.cpp` in the attachments section (the same page as where you downloaded the statement). It contains a custom square root function in C++ that may help you deal with precision errors. You may choose to not use the function in your code.