

## C. Delivering Carcinogen

time limit per test: 2 seconds  
memory limit per test: 256 megabytes  
input: standard input  
output: standard output

Qwerty the Ranger arrived to the Diatar system with a very important task. He should deliver a special carcinogen for scientific research to planet Persephone. This is urgent, so Qwerty has to get to the planet as soon as possible. A lost day may fail negotiations as nobody is going to pay for an overdue carcinogen.

You can consider Qwerty's ship, the planet Persephone and the star Diatar points on a plane. Diatar is located in the origin of coordinate axes — at point  $(0, 0)$ . Persephone goes round Diatar along a circular orbit with radius  $R$  in the counter-clockwise direction at constant linear speed  $v_p$  (thus, for instance, a full circle around the star takes of time). At the initial moment of time Persephone is located at point  $(x_p, y_p)$ .

At the initial moment of time Qwerty's ship is at point  $(x, y)$ . Qwerty can move in any direction at speed of at most  $v$  ( $v > v_p$ ). The star Diatar is hot (as all stars), so Qwerty can't get too close to it. The ship's metal sheathing melts at distance  $r$  ( $r < R$ ) from the star.

Find the minimum time Qwerty needs to get the carcinogen to planet Persephone.

### Input

The first line contains space-separated integers  $x_p, y_p$  and  $v_p$  ( $-10^4 \leq x_p, y_p \leq 10^4, 1 \leq v_p < 10^4$ ) — Persephone's initial position and the speed at which it goes round Diatar.

The second line contains space-separated integers  $x, y, v$  and  $r$  ( $-10^4 \leq x, y \leq 10^4, 1 < v \leq 10^4, 1 \leq r \leq 10^4$ ) — The initial position of Qwerty's ship, its maximum speed and the minimum safe distance to star Diatar.

It is guaranteed that  $r^2 < x^2 + y^2, r^2 < x_p^2 + y_p^2$  and  $v_p < v$ .

### Output

Print a single real number — the minimum possible delivery time. The answer will be considered valid if its absolute or relative error does not exceed  $10^{-6}$ .

### Examples

input
10 0 1 -10 0 2 8
output
9.584544103

  

input
50 60 10 50 60 20 40
output
0.000000000