

The Rolling Ball

A solid spherical ball of radius R rolls without slipping on the inside surface of a fixed cone, whose tip points downward. The half-angle at the vertex of the cone is u . Initial conditions have been set up so that the ball travels around the cone in a horizontal circle of radius $l > R$, with the points on the ball that touch the cone tracing out a circle on the ball.

Determine the radius of the circle of these contact points, if you want the sphere to travel around the cone as fast as possible.

Input

Each line of input has integers l ($R < l \leq 1000000$) R ($0 < R \leq 1000$) and u ($0 < u < 90$) given in degrees.

Output

For each line of input, output the radius of the circle of the contact points, round to integer.

Example

Input:

220000 100 29

Output:

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Problemsetter --- Wu, Xiaogang