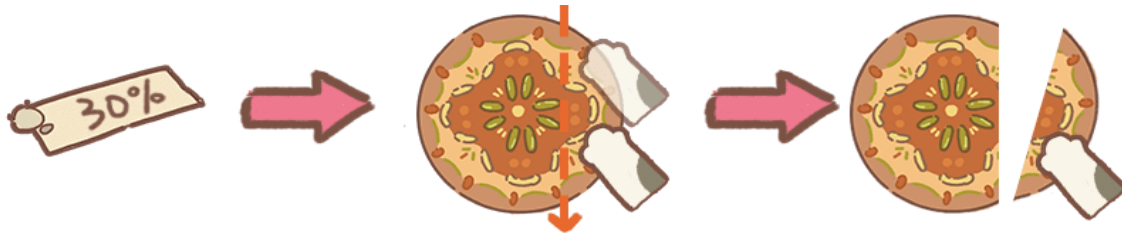




Problem H: Cut Cake

Time limit: 1s; Memory limit: 512 MB



*Image from Animal Restaurant game

Chef Gumi is the Chef of Animal Restaurant. Recently, he is interested in the mini-game Cut Cake. He is given a cake and he has to cut according to the customer's request – the customer wants a part of the cake which is smaller than 50%. Please help Gumi check if he satisfies the request.

In the two-dimensional Cartesian coordinate system, the cake is a circle with its center point C and its radius while the cut is illustrated by a straight line from 2 different points – point A and point B .

Input

The input consists of 8 float numbers. The first six numbers represent the x - and y -coordinates of points A , B , and C , respectively, ($-10^5 \leq x_A, y_A, x_B, y_B, x_C, y_C \leq 10^5$). Next is the radius of the cake ($0 < R \leq 10^3$) and last is the percentage of cake the customer wants ($0 < P < 50$)

Output

Print YES if Gumi satisfies his customer's request, which means his cut is through the cake and the difference between the smaller part of the cake and the request is within 5%. If not or his cut is outside or only touches the cake, print NO.

Sample

Input	Output
-1 0 0 1 0 0 1 10	YES
-1 0 0 1 0 0 1 15	NO