Problem 2—Homer's Pizza

Homer and Lenny are sharing a pizza. The pizza is cut with a single straight cut that may or may not go through the center of the pizza, slicing the pizza in two. Of course, Homer grabs the larger half. You are to compute the percentage of the pizza that would be. If the cut fails to cut the pizza at all, of course Homer eats all of it!

INPUT SPECIFICATION. The input file is divided into a number of cases. Each case begins with "*r*<EOLN>", where *r* is the radius of the pizza. (The pizza is centered at the origin.) The next line consists of the x and y coordinates of one point on the dividing line, separated by one space and terminated by <EOLN>. The next line is consists of the x and y coordinates of a different point on the dividing line, also separated by one space and terminated by <EOLN>. "0<EOLN>" follows the last case. This is not to be processed; it just specifies the end of input. The numbers specified may be integers or floating point numbers. The radius will always be positive. The points that define the dividing line may or may not be on the pizza; the only purpose they serve is to define the line.

OUTPUT SPECIFICATION. The output cases appear in the same order as the corresponding input cases. Each output case is of the form "Case *cs*: Homer has eaten *p*% of the pizza." followed by two <EOLN> characters. *cs* is the case number and *p* is the answer rounded to the nearest integer.

SAMPLE INPUT.

```
1<EOLN>
1•0<EOLN>
0•1<EOLN>
<EOLN>
10<EOLN>
100•0<EOLN>
100•1<EOLN>
<EOLN>
0<EOLN>
<EOF>
```

SAMPLE OUTPUT.

```
Case•1:•Homer•has•eaten•91%•of•the•pizza!<EOLN>
<EOLN>
Case•2:•Homer•has•eaten•100%•of•the•pizza!<EOLN>
<EOLN>
<EOF>
```