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# C Program To Calculate Area of Rhombus

Lets write a C program to calculate area of a Rhombus using its side and a diagonal. We ask the user to input the value of side and a diagonal.

A **Rhombus** is a polygon having 4 equal sides in which both the opposite sides are parallel and opposite angles are equal.

First we calculate the value of second diagonal. Once we know the value of both the diagonals of the Rhombus, its easy and straightforward to calculate the area of Rhombus using the formula:

*q = sqrt( (4 x side x side) – (p x p) );*  
*p = sqrt( (4 x side x side) – (q x q) );*

*area = (p x q) / 2.0;*  
**OR**  
*area = (p x q) x 0.5;*

where p and q are diagonals of the Rhombus.

### Expected Output for the Input

**User Input:**  
Enter length of side of the Square  
10.5

**Output:**  
Area of the Square is 110.250000  
Perimeter of the Square is 42.000000  
Diagonal of the Square is 14.849242

### Source Code: C Program To Calculate Area of Rhombus

#include<stdio.h>

#include<math.h>

int main()

{

float area, side, p, q;

printf("Enter the length of side and a diagonal\n");

scanf("%f%f", &side, &p);

q = sqrt( (4 \* side \* side) - (p \* p) );

area = (p \* q) \* 0.5;

printf("Area of the Rhombus is %f \n", area);

return 0;

}

**Output 1:**  
Enter the length of side and a diagonal  
5  
7.07  
Area of the Rhombus is 25.000000

**Output 2:**  
Enter the length of side and a diagonal  
10  
16  
Area of the Rhombus is 96.000000