Given A and B, you have to determine the maximum value of the function :

$$F(\theta) = A * Sin\theta + B * Cos\theta$$

Input

First line of input will contain the number of test cases, $T \leq 2000$. Then there follows T lines, each containing two integers A and B separated by a single space. A and B will fit in a signed 32bit integer.

Output

For each case, print one line containing two single space separated real values rounded to two decimal places. The first one is the **lowest non-negative** value of θ (θ is in **Radian**) for which the $F(\theta)$ gives maximum value and the second one is the maximum value.

Note: Pi is considered to be $\arccos(-1)$.

Sample Input

```
4
1 1
-1 1
1 -1
-1 -1
```

Sample Input

```
0.79 1.41
5.50 1.41
2.36 1.41
3.93 1.41
```