I. Amicable Numbers

Program:	`amicable .(cpp|java)`
Input:	`amicable .in`
Balloon Color:	`purple`

Description

Amicable numbers are two different numbers where the following holds:
- The first number is equal to the sum of the proper divisors of the second number.
- The second number is equal to the sum of the proper divisors of the first number.

Note that a proper divisor of a number *n* is a divisor of a number *n*, excluding *n* itself. For example, 220 and 284 are amicable numbers. The proper divisors of 220 are 1, 2, 4, 5, 10, 11, 20, 22, 44, 55 and 110; their sum is 284. The proper divisors of 284 are 1, 2, 4, 71 and 142; their sum is 220. Write a program that reads pairs of numbers and decides whether each pair is amicable.

Input

The input starts with a line with one integer $1 \leq nP \leq 100{,}000$, which is the number of pairs. Each of the next *nP* lines of the input file consists of two integers *a* and *b*. All integer pairs are positive and less than 1,000,000.

Output

For each pair of integers *a* and *b* in the input, you should print whether the pair is amicable.

Display the following message for amicable pairs.

```
a b are amicable numbers
```

Display the following message for pairs that are not amicable.

```
a b are not amicable numbers
```

Sample Input/Output

amicable.in

```
2
220 284
1324 8809
```

OUTPUT

```
220 and 284 are amicable numbers
1324 and 8809 are not amicable numbers
```