# Problem A: Disputed Claims

Kyle Pickett works in the county office and is in charge of land ownership in his county. When two people make claims on the same area of land, it is up to Kyle to determine who is the rightful owner. All land claims are conveniently in the shape of rectangles aligned along the north-south and east-west axes. When two people bring in claims, the first thing Kyle needs to do is to determine whether or not there is any overlap between them. Assuming that A and B are the two claims of land, there are four scenarios of interest to Kyle: A completely surrounding B, B completely surrounding A, A and B overlapping (but neither surrounding the other) and A and B not overlapping. The pictures below show two examples each of all four cases. Note that if A and B intersect at only a point or line they are considered non-overlapping.

A surrounds B   B surrounds A   A and B overlap   A and B do not overlap
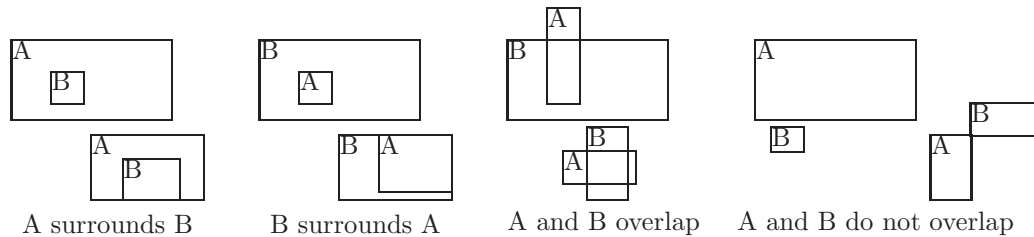
For this problem, you will read in descriptions of two rectangular claims, and determine which of the four cases is true.

Input

There will be multiple input sets. The first line of the input will be an integer n indicating the number of input sets. Each input set will consist of a single line containing 8 non-negative integers:

$$x1_A \ y1_A \ x2_A \ y2_A \ x1_B \ y1_B \ x2_B \ y2_B$$

where $x1_A, y1_A$ are the coordinates of the lower left corner of A's claim, and $x2_A, y2_A$ are the upper right corner of A's claim. The remaining four values are the corresponding corners of B's claim. All claims will have non-zero area (pretty ridiculous claim otherwise!).

Output

For each input set, output either the phrase `A surrounds B`, `B surrounds A`, `A and B overlap` or `A and B do not overlap`. The two claims will never be identical.

Sample Input

```
3
10 10 20 20 12 0 14 18
0 0 5 5 0 0 6 6
0 0 5 5 0 5 5 10
```

Sample Output

```
A and B overlap
B surrounds A
A and B do not overlap
```