Intervals (3) P89265_en

Write a program that, given two intervals, tells if one is inside the other, and computes the interval corresponding to their intersection, or tells that it is empty.

Input

Input consists of four integer numbers a_1, b_1, a_2, b_2 that represent the intervals $[a_1, b_1]$ and $[a_2, b_2]$. Assume $a_1 \leq b_1$ and $a_2 \leq b_2$.

Output

Print '`=`' if the intervals are equal, '`1`' if the first is inside the second (but they are not equal), '`2`' if the second is inside the first (but they are not equal), or '`?`' otherwise. Also, print "`[]`" if the intersection is empty, or "`[`x`,`y`]`" if this is their non-empty intersection.

Sample input 1

```
20 30   10 40
```

Sample output 1

```
1 , [20,30]
```

Sample input 2

```
10 20   10 20
```

Sample output 2

```
= , [10,20]
```

Sample input 3

```
20 30   10 20
```

Sample output 3

```
? , [20,20]
```

Sample input 4

```
10 20   30 40
```

Sample output 4

```
? , []
```

Problem information

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Generation : 2013-09-02 15:17:25