Problem 4—Best Buds

All of the various programs in the video game world have id numbers: positive integers. It turns out that two programs are best buds if their id numbers happen to be *amicable*. Two distinct numbers are said to be amicable if the sum of the proper factors (the factors of the number other than the number itself) of each is equal to the other. For example: the proper factors of 220 are 1, 2, 4, 5, 10, 11, 20, 22, 44, 55, and 110, and these numbers sum to 284. The proper factors of 284 are 1, 2, 4, 71, and 142, and these numbers sum to 220. So, 220 and 284 are amicable or best buds! You are given a range of integers, you are to compute all the best buds whose smaller value falls within that range (inclusively).

INPUT SPECIFICATION. Each input case consists of two unsigned positive decimal integers less than 1,000,000 separated by one space and followed by <**EOLN**>. The first number will always be less than the second. The last input case will be followed by "0 0<**EOLN**>".

OUTPUT SPECIFICATION. The output cases should appear in the same order as the input. Each output case should begin with "Case *c*:" where *c* is the case number, followed by two <**EOLN**>'s. What should then follow is a list of ordered pairs: "(*m*,*n*)" where *m* is strictly less than *n* and *m* and *n* are best buds. Each ordered pair should be followed by <**EOLN**>. The ordered pairs should be printed in increasing order of the smaller number. An extra <**EOLN**> should follow the last case.

SAMPLE INPUT.

```
200·300<EOLN>
1000·3000<EOLN>
0·0<EOLN>
<EOF>
```

SAMPLE OUTPUT.

```
Case·1:<EOLN>
<EOLN>
(220,284)<EOLN>
<EOLN>
Case·2:<EOLN>
<EOLN>
(1184,1210)<EOLN>
(2620,2924)<EOLN>
<EOLN>
<EOF>
```