

Can't My Numbers Just Get Along

Amicable numbers are two different numbers so related that the sum of the proper divisors of each is equal to the other number. (A proper divisor of a number is a positive factor of that number other than the number itself. For example, the proper divisors of 8 are 1, 2, and 4.)

The smallest pair of amicable numbers is (220, 284). They are amicable because the proper divisors of 220 are 1, 2, 4, 5, 10, 11, 20, 22, 44, 55 and 110, of which the sum is 284; and the proper divisors of 284 are 1, 2, 4, 71 and 142, of which the sum is 220.

The input file has the following format:

- Each line contains a pair of numbers

Your output should contain one line to declare whether the two numbers are amicable (as a sentence). The next two lines will display all of the factors of each number (excluding the number itself) and the sum of those factors. Display must look like the example output.

For example, if the input file is:

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220 284
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220 285
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then a correct output is:

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The numbers 220 and 284 are amicable.
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Factors of 220 are 1, 2, 4, 5, 10, 11, 20, 22, 44, 55, and 110. Sum is 284.
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Factors of 284 are 1, 2, 4, 71, and 142. Sum is 220.
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The numbers 220 and 285 are not amicable.
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Factors of 220 are 1, 2, 4, 5, 10, 11, 20, 22, 44, 55, and 110. Sum is 284.
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Factors of 285 are 1, 3, 5, 15, 19, 57, and 95. Sum is 195.
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