

From Euclid it is known that for any positive integers A and B there exist such integers X and Y that $AX + BY = D$, where D is the greatest common divisor of A and B . The problem is to find for given A and B corresponding X , Y and D .

Input

The input will consist of a set of lines with the integer numbers A and B , separated with space ($A, B < 1000000001$).

Output

For each input line the output line should consist of three integers X , Y and D , separated with space. If there are several such X and Y , you should output that pair for which $|X| + |Y|$ is the minimal. If there are several X and Y satisfying the minimal criteria, output the pair for which $X \leq Y$.

Sample Input

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4 6
17 17
```

Sample Output

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-1 1 2
0 1 17
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