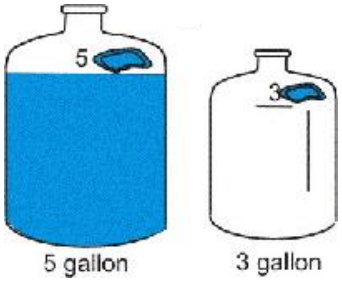
**Jugs Puzzle**

Cayla and Zya were confronted with the following puzzle. They were given a 3-gallon jug and a 5-gallon jug and were asked to fill the 5-gallon jug with exactly 4 gallons. They must make exactly four gallons from five and three gallon jugs. They did it just in time. This is how they did:

(1) Fill the five gallon jug. Three gallon jug is empty.
(2) Empty three gallons from the five gallon jug into the three gallon jug.
(3) There remains two gallons in the five gallon jug. Empty the three gallon jug.
(4) Pour the two gallons into the three gallon jug.
(5) Fill the five gallon jug and pour one gallon from it into the three gallon jug - filling the three gallon jug.
(6) Four gallons remain in the five gallon jug.
(7) We have solved the problem – success!

This problem generalizes that puzzle on how they did.




You have two jugs, A and B, and an infinite supply of water. There are three types of actions that you can use: (1) you can fill a jug, (2) you can empty a jug, and (3) you can pour from one jug to the other. Pouring from one jug to the other stops when the first jug is empty or the second jug is full, whichever comes first. For example, if A has 5 gallons and B has 6 gallons and a capacity of 8, then pouring from A to B leaves B full and 3 gallons in A.

A problem is given by a triple (Ca,Cb,N), where Ca and Cb are the capacities of the jugs A and B, respectively, and N is the goal. A solution is a sequence of steps that leaves exactly N gallons in jug B. The possible steps are as follow :

fill A
fill B
empty A
empty B
pour A B
pour B A
success

where "pour A B" means "pour the contents of jug A into jug B", and "success" means that the goal has been accomplished.

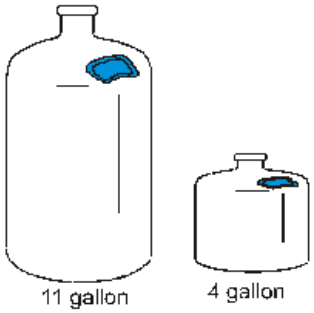
You may assume that the input you are given does have a solution.

Input to your program consists of a series of input lines each defining one puzzle. Input for each puzzle is a single line of three positive integers: Ca, Cb, and N. Ca and Cb are the capacities of

jugs A and B, and N is the goal. You can assume 0 < Ca <= Cb and N <= Cb <=1000 and that A and B are relatively prime to one another.

Output from your program will consist of a series of instructions from the list of the potential output lines which will result in either of the jugs containing exactly N gallons of water. The last line of output for each puzzle should be the line "success". Output lines start in column 1 and there should be no empty lines nor any trailing spaces.

**Sample Mathematical Solution**
*Given and 11 gallon and a 4 gallon jug. Make exactly one gallon.*




***Possible solution***

```
11 – 4 = 7
7 – 4 = 3 and 1 gallon empty

11 – 1 = 10
10 – 4 = 6
6 -4 = 2 and 2 gallon empty
11 – 2 = 9
9 – 4 = 5
5 – 4 = 1 and 3 gallon empty
```

Thus we have exactly one gallon. Also, we can obtain `11 – 3 = 8` gallons. Along the way we have made every number of gallons, from one to eleven.

**Sample Input `jugs.dat`**

```
3 5 4
5 7 3
```

**Sample Output `jugs.out`**

```
fill B
pour B A
empty A
pour B A
fill B
pour B A
success
fill A
pour A B
fill A
pour A B
empty B
pour A B
success
```