2483   House Numbering

The government of Acmonia has decided that henceforth all house numbers should be given in binary instead of decimal notation. Householders will now have to purchase '0' and '1' binary digits to display on their houses. For reasons much too complicated to discuss here it seems that the cost to a householder of a '0' binary digit and of a '1' binary digit may well differ. Your task is to write a program which will report to householders the cost of their new numbers.

Input

The input text consists of a number of sets of problems. The first line of a set is of the form 'COST a b'. For that set:

- a and b are both integers, $0 \leq a, b \leq 1000$,
- a '0' binary digit costs a dollars,
- a '1' binary digit costs b dollars.

  The first line is followed by one or more lines each consisting of a single integer n.

- $0 \leq n \leq 2000000$,
- n indicates a house number, expressed as a standard decimal number.

  A single '#' on a line indicates the end of input.

Output

Each set of output data must begin with a single output line showing consisting of the word 'Set', followed by a space (' '), and the current set number (counted from 1). This is followed by the cost of the binary digits for each house number, each cost being displayed as a decimal number on a separate line.

Sample Input

```
COST 1 1
1
34
15
COST 1 10
1
34
15
COST 10 1
1
34
15
COST 0 5
1
16
#
```

Sample Output

```
Set 1
1
6
4
Set 2
10
24
40
Set 3
1
42
4
Set 4
5
5
```