Number Array

Create a program that helps you keep track of a number array. First, you are going to **receive the numbers** on a **single line, separated by space**, in the following **format**:

"{number$_1$} {number$_2$} {number$_3$}… {number$_n$}"

Then you will start receiving **commands** until you read the "**End**" message. There are **five** possible commands:

- **"Switch {index}"**
  - Find **the number** on this **index** in your collection, if the **index exists**, and **switch** its **sign** (negative <-> positive).
- **"Change {index} {value}"**
  - **Replace** the **number** on the given index **with the number given,** if the **index exists**.
- **"Sum Negative"**
  - Print the **sum** of **all negative numbers**.
- **"Sum Positive"**
  - Print the **sum** of **all positive numbers**.
- **"Sum All"**
  - Print the **sum** of **all numbers**.

In the end, print the **positive numbers** on a **single line, keeping in mind that 0 is positive,** separated by a **single space** in the following format:

"{number$_1$} {number$_2$} {number$_3$}… {number$_n$}"

Input

- On the **1st line** you are going to receive the **numbers of the array** (always **integers**), separated by a single space.
- On the next **lines**, until the **"End"** command is received, you will be receiving commands.

Output

- Print the tasks in the **format described above**.

Examples

Input	Output
1 2 3 4 5 Switch 4 Change 0 -3 Sum Negative End	-8 2 3 4
Comments	
First, we receive the command "**Switch 4**" and we make the number on index 4 **negative** (because it is **positive before** the **command**). After this command, the task collection looks like this: **1 2 3 4 -5** Afterwards, we receive the "**Change 0 -3**" command and we need to change the number on index 0 with the number -3. The collection looks like this now: **-3 2 3 4 -5** After that, we receive the "**Sum Negative**" command, which means we need to print the sum of all negative numbers and it is **-8**. In the end, we print all of the **positive numbers**. This is the result collection: **2 3 4**	
1 2 3 4 5 4 3 2 1 0 Switch -4 Change 13 0 Switch 0 Sum All End	23 2 3 4 5 4 3 2 1 0