Make a Salad

Write a program that helps you **prepare vegetable salads**, which must be with a **definite** amount of **calories**. You will receive **two lines**. The **first** one will be the **vegetables**. The **second** one, the **calorie values of the salads**. Both will be **separated** by a single **space**. They will come in the following format:

"{vegetable$_1$} {vegetable$_2$}… {vegetable$_n$}"

"{calories$_1$} {calories$_2$}… {calories$_n$}"

Here is a table with the exact names of the **vegetables** and **their calories**:

Vegetables	Calories
tomato	80
carrot	136
lettuce	109
potato	215

Start making the **salads** in the following way: take the **last received calories** and start adding vegetables from the **first received vegetable**. Each time you take a vegetable, you must **reduce** the **amount** of **calories** for the **given salad** with **its calorie value** and **remove** it from the collection. A salad is considered **ready**, when its **calorie value** reaches **0**. When the **salad is ready**, **remove it** from the collection. If the calories of the current vegetable **exceed** the amount of **needed calories** for the **salad**, **finish** the salad and **throw** what is left of the vegetable. When you run out of **either salads to make**, or **vegetables**, print **the salads you made** (their calorie value) on a single line, separated by space, beginning with the **first** salad you made in the following format:

"{salad$_1$} {salad$_2$}… {salad$_n$}"

At last, print either the vegetables that are left, or the calories of the salads you couldn't prepare, **depending on the case** – if you have vegetables left, print them, if you have salads left, print them on a single **line**, **separated** by **space**.

Input

- On the **first** line, you will receive the **vegetables** – **strings** separated by a single space.
- On the **second** line, you will receive the **salads' calories** – **integers**, separated by a single space.
- Input will always be **valid**.

Output

- Print the finished salads' calories from the first made one to the last one in the format described above

Examples

Input	Output	Comments
tomato potato carrot lettuce tomato 250 563 478 330 470 112	112 470 330 478 563 250	We take the **first** received vegetable - the **tomato**. It has **80** calories, so we take the **last** received salad calories –

		112 and **subtract 80** from it. The salad needs **32** more **calories**. We **remove** the **vegetable** and take the **next** one – **potato**. It has **215 calories**. The **first** salad is **finished**, so we **remove** the **vegetable**, also the **salad's calories** from the collection. We take the **next one**, which needs **470** calories, and so on.
carrot tomato potato potato lettuce tomato potato potato 105 130 200 110	110 200 130 105 tomato potato potato	