Scenario

You have been tasked with navigating a drone through the streets of a busy city.

The city has luckily been designed to have streets in a pure grid, that somehow stretches infinitely in every direction.

You have been given a specific set of directions you must use to navigate the drone safely through the city.

Along with the drone you have received a set of instructions on how to use the directions given to you.

Task

Your task is to pilot the drone safely through the city, following the directions given to you, and relay the coordinates that you end at.

Part 1

Given your input in the file `problem-basic-input.txt`, follow the directions and record the final coordinates the drone will end it's journey at.

Instructions

The drone you're piloting starts in the center of the city; at coordinates "**0,0**" facing "**north**".

The directions given to you will contain the following information:

Whether to turn **left (L)** or whether to turn **right (R)** by a complete **90 degrees**.

This will then be followed by a series of characters that indicate whether you should move **forwards (+)** or **backwards (-)**.

Examples

Example 1

Input: `R++ L+++`

Turning **right**, you would move **forward, twice**. You would then turn **left** and move **forward, three streets**.

This results in the final coordinates of **2,3**.

Example 2

Input: `L++ R-- L+`

Turning **left**, you would move **forward, twice**. Turn **right** and move **backward, twice**. Then finally, turn **left** and move **forward, once**.

This results in the final coordinates of **-3,-2**.

Further Examples

Below are some more complex examples you can use for verification.

Input	Answer
`R+ L-- R+ R-- L++`	`4,0`
`L-++ L+ R+ R- L-++ R-- R-+- L+`	`-4,-3`

Part 2 (Optional)

The file `problem-complex-input.txt` contains a more complex input, and can be optionally completed.

Instructions

Including the instructions stated in part 1, there are now extra directions specified.

There are directions to travel **north (N)**, **east (E)**, **south (S)**, and **west (W)**.

These instructions dictate that the drone does not turn at all, but instead just travels in the given cardinal direction.

Examples

Example 1

Input: `L+ E- R+ R+++ W- S+ N+`

Turning **left**, you would move **forward, once**. You would then travel **east**, but **backwards, once**. This actually results in a movement towards the **west**. Turn **right** and travel **forward, once**. Turn **right** again, and travel **forward, thrice**. Travel **west**, **backwards, once**. Travel **south**, **forwards, once**. Finally, travel **north**, **forwards, once**.

This results in the final coordinates of **2,1**.

Example 2

Input: `S- L- S- L+ R--+ W+ L+-+- N+`

Following the input above results in the final coordinates of **1,2**.