## Problem 1 - Computer Store

Problem for exam preparation for the [Programming Fundamentals Course @SoftUni](https://softuni.bg/courses/programming-fundamentals-csharp-java-js-python).

Submit your solutions in the SoftUni judge system at <https://judge.softuni.org/Contests/Practice/Index/2517#0>.

Write a program that **prints you a receipt** for your new computer. You will receive the **parts' prices (without tax)** until you receive what type of customer this is - **special** or **regular**. Once you receive the type of customer you should print the receipt.

The **taxes are 20%** of each part's price you receive.

If the customer is **special**, he has a 10% discount on the total price with taxes.

If a given price is not a positive number, you should print **"Invalid price!"** on the console and continue with the next price.

If the total price is equal to zero, you should print **"Invalid order!"** on the console.

### Input

* You will receive numbers representing **prices (without tax)** until command **"special"** or **"regular":**

### Output

* The receipt should be in the following format:

**"Congratulations you've just bought a new computer!**

**Price without taxes: {total price without taxes}$**

**Taxes: {total amount of taxes}$**

**-----------**

**Total price: {total price with taxes}$"**

**Note: All prices should be displayed to the second digit after the decimal point! The discount is applied only on the total price. Discount is only applicable to the final price!**

### Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| 1050  200  450  2  18.50  16.86  special | Congratulations you've just bought a new computer!  Price without taxes: 1737.36$  Taxes: 347.47$  -----------  Total price: 1876.35$ |
| **Comment** | |
| 1050 – valid price, total 1050  200 – valid price, total 1250  …  16.86 – valid price, total 1737.36  We receive **special**  Price is positive number, so it is valid order  Price without taxes is 1737.36  Taxes: 20% from 1737.36 = 347.47  Final price = 1737.36 + 347.47 = 2084.83  Additional 10% discount for special customers  2084.83 – 10% = 1876.35 | |
| **Input** | **Output** |
| 1023  15  -20  -5.50  450  20  17.66  19.30  regular | Invalid price!  Invalid price!  Congratulations you've just bought a new computer!  Price without taxes: 1544.96$  Taxes: 308.99$  -----------  Total price: 1853.95$ |
| regular | Invalid order! |

### JS Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| ([  '1050',  '200',  '450',  '2',  '18.50',  '16.86',  'special'  ]) | Congratulations you've just bought a new computer!  Price without taxes: 1737.36$  Taxes: 347.47$  -----------  Total price: 1876.35$ |
| **Comment** | |
| 1050 – valid price, total 1050  200 – valid price, total 1250  …  16.86 – valid price, total 1737.36  We receive **special**  Price is positive number, so it is valid order  Price without taxes is 1737.36  Taxes: 20% from 1737.36 = 347.47  Final price = 1737.36 + 347.47 = 2084.83  Additional 10% discount for special customers  2084.83 – 10% = 1876.35 | |
| **Input** | **Output** |
| ([  '1023',  '15',  '-20',  '-5.50',  '450',  '20',  '17.66',  '19.30', 'regular'  ]) | Invalid price!  Invalid price!  Congratulations you've just bought a new computer!  Price without taxes: 1544.96$  Taxes: 308.99$  -----------  Total price: 1853.95$ |
| ([  'regular'  ]) | Invalid order! |

## Problem 2 - The Lift

Problem for exam preparation for the [Programming Fundamentals Course @SoftUni](https://softuni.bg/courses/programming-fundamentals-csharp-java-js-python).

Submit your solutions in the SoftUni judge system at <https://judge.softuni.org/Contests/Practice/Index/2517#1>.

Write a program that **finds a place for the tourist on a lift.**

Every wagon should have **a maximum of 4 people on it**. If a wagon is full, you should direct the people to **the next one with space** available.

### Input

* **On the first line,** you will receive **how many people** are waiting to get **on the lift**
* **On the second line**, you will receive the **current state of the lift separated by a single space:** **" "**.

### Output

**When there is no more available space left on the lift**, or there are **no more people in the queue**, you should print on the console the final state of the lift's wagons separated by **" "** and one of the following messages:

* If there are no more people and the lift have empty spots, you should print:

**"The lift has empty spots!**

**{wagons separated by ' '}"**

* If there are still people in the queue and no more available space, you should print:

**"There isn't enough space! {people} people in a queue!**

**{wagons separated by ' '}"**

* If the lift is full and there are no more people in the queue, you should print only the wagons separated by **" "**

### Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| 15  0 0 0 0 | The lift has empty spots!  4 4 4 3 |
| **Comment** | |
| First state - 4 0 0 0 -> 11 people left  Second state – 4 4 0 0 -> 7 people left  Third state – 4 4 4 0 -> 3 people left | |
| **Input** | **Output** |
| 20  0 2 0 | There isn't enough space! 10 people in a queue!  4 4 4 |
| **Comment** | |
| First state - 4 2 0 -> 16 people left  Second state – 4 4 0 -> 14 people left  Third state – 4 4 4 -> 10 people left, but there're no more wagons. | |

### JS Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| [  "15",  "0 0 0 0 0"  ] | The lift has empty spaces!  4 4 4 3 0 |
| **Comment** | |
| First state - 4 0 0 0 -> 11 people left  Second state – 4 4 0 0 -> 7 people left  Third state – 4 4 4 0 -> 3 people left | |
| **Input** | **Output** |
| [  "20",  "0 2 0"  ] | There isn't enough space! 10 people in a queue!  4 4 4 |
| **Comment** | |
| First state - 4 2 0 -> 16 people left  Second state – 4 4 0 -> 14 people left  Third state – 4 4 4 -> 10 people left, but there're no more wagons. | |

# Problem 3 - Memory game

Problem for exam preparation for the [Programming Fundamentals Course @SoftUni](https://softuni.bg/courses/programming-fundamentals-csharp-java-js-python).

Submit your solutions in the SoftUni judge system at <https://judge.softuni.org/Contests/Practice/Index/2517#1>.

Write a program that recreates the **Memory game**.

On the first line, you will **receive a sequence of elements**. Each element in the sequence **will have a** **twin**. Until the player receives **"end"** from the console, you will receive **strings with two integers** separated by a space, representing **the indexes** of elements in the sequence.

If the player **tries to cheat** and enters **two equal indexes** or indexes which are **out of bounds of the sequence**, you should **add** two matching elements at the middle of the sequence in the following format:

**"-{number of moves until now}a"**

Then print this message on the console:

**"Invalid input! Adding additional elements to the board"**

### Input

* On the **first** line**,** you will receive a **sequence of elements**
* On the **following** lines, you will receive **integers** until the command **"end"**

### Output

* Every time the player hit **two matching elements**, you should **remove** them from the sequence and **print** on the console the following message:

**"Congrats! You have found matching elements - ${element}!"**

* If the player hit **two different elements**, you should **print** on the console the following message:

**"Try again!"**

* If the player hit **all matching elements** before he receives **"end"** from the console, you should **print** on the console the following message:

**"You have won in {number of moves until now} turns!"**

* If the player receives **"end"** **before** **he hits all matching elements**, you should **print** on the console the following message:

**"Sorry you lose :(**

**{the current sequence's state}"**

## Constraints

* **All elements in the sequence will always have a matching element.**

## Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| 1 1 2 2 3 3 4 4 5 5  1 0  -1 0  1 0  1 0  1 0  end | Congrats! You have found matching elements - 1!  Invalid input! Adding additional elements to the board  Congrats! You have found matching elements - 2!  Congrats! You have found matching elements - 3!  Congrats! You have found matching elements - -2a!  Sorry you lose :(  4 4 5 5 |
| **Comment** | |
| 1)  1 0  1 1 2 2 3 3 4 4 5 5 –> 1 = 1, equal elements, so remove them. Moves: 1  2)  -1 0  -1 is invalid index so we add additional elements  2 2 3 3 -2а -2а 4 4 5 5, Moves: 2  3)  1 0  2 2 3 3 -2а -2а 4 4 5 5 -> 2 = 2, equal elements, so remove them. Moves: 3  4)  1 0  3 3 -2а -2а 4 4 5 5 -> 3 = 3, equal elements, so remove them. Moves: 4  5)  1 0  -2а -2а 4 4 5 5 -> -2а = -2а, equal elements, so remove them. Moves: 5  6)  You receive the end command.  There are still elements in the sequence, so the player loses the game.  Final state - 4 4 5 5 | |
| a 2 4 a 2 4  0 3  0 2  0 1  0 1  end | Congrats! You have found matching elements - a!  Congrats! You have found matching elements - 2!  Congrats! You have found matching elements - 4!  You have won in 3 turns! |
| a 2 4 a 2 4  4 0  0 2  0 1  0 1  end | Try again!  Try again!  Try again!  Try again!  Sorry you lose :(  a 2 4 a 2 4 |

## JS Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| [  "1 1 2 2 3 3 4 4 5 5",  "1 0",  "-1 0",  "1 0",  "1 0",  "1 0",  "end"  ] | Congrats! You have found matching elements - 1!  Invalid input! Adding additional elements to the board  Congrats! You have found matching elements - 2!  Congrats! You have found matching elements - 3!  Congrats! You have found matching elements - -1a!  Sorry you lose :(  4 4 5 5 |
| **Comment** | |
| 1)  1 0  1 1 2 2 3 3 4 4 5 5 –> 1 = 1, equal elements, so remove them. Moves: 1  2)  -1 0  -1 is invalid index so we add additional elements  2 2 3 3 -2а -2а 4 4 5 5, Moves: 2  3)  1 0  2 2 3 3 -2а -2а 4 4 5 5 -> 2 = 2, equal elements, so remove them. Moves: 3  4)  1 0  3 3 -2а -2а 4 4 5 5 -> 3 = 3, equal elements, so remove them. Moves: 4  5)  1 0  -2а -2а 4 4 5 5 -> -2а = -2а, equal elements, so remove them. Moves: 5  6)  You receive the end command.  There are still elements in the sequence, so the player loses the game.  Final state - 4 4 5 5 | |
| [  "a 2 4 a 2 4",  "0 3",  "0 2",  "0 1",  "0 1",  "end"  ] | Congrats! You have found matching elements - a!  Congrats! You have found matching elements - 2!  Congrats! You have found matching elements - 4!  You have won in 3 turns! |
| [  "a 2 4 a 2 4",  "4 0",  "0 2",  "0 1",  "0 1",  "end"  ] | Try again!  Try again!  Try again!  Try again!  Sorry you lose :(  a 2 4 a 2 4 |