## "Programming Basics" Exam

## 4. Darts

Your task is to write a program that calculates whether a player has succeeded in winning a leg. (A leg is called a single game of darts.)

Initially, the player **starts with 301 points**. The player throws the dart onto the board, and for each field hit, he gets a certain number of points. Each field has three sectors: a **Single** sector from which the points of the field are taken. Double sector, from which the **doubled points** of the field are taken, and Triple sector, from which the points are **multiplied by 3**.

The resulting points from each throw are subtracted from the starting points until 0 is reached.

**Note**: If a throw yields more points than available, it is considered unsuccessful and the player must throw again until he hits points equal to or less than the remaining points, such a throw is considered successful.

**Example**: If 100 points are available, a throw giving more than 100 points is unsuccessful.

With 100 points available, a throw giving less than or equal to 100 points is successful.

### Input Data

**One line** is read initially:

* **The player's name – a string**

**Then two lines are read repeatedly until the "Retire" command is received:**

1. **Field – string ("**Single**", "**Double**" or "**Triple**")**
2. **Points – an integer in the range [0… 100]**

### Output Data

The game ends when the "**Retire**" command is entered or when the starting 301 points equal 0.

One line must be printed on the console:

* If the player **has won the leg:**
  + **"{player's name} won the leg with {successful throws} shots."**
* If the player **has given up the game**:
  + **"{player's name} retired after {successful throws} unsuccessful shots."**

### Sample Input and Output

|  |  |  |
| --- | --- | --- |
| **Input** | **Output** | **Comments** |
| Michael van Gerwen  Triple  20  Triple  19  Double  10  Single  3  Single  1  Triple  20  Triple  20  Double  20 | Michael van Gerwen won the leg with 8 shots. | We start with 301 points  First throw is triple 20 -> 60 <= 301  301 - 60 = 241; successful throws = 1  Second throw is triple 19 -> 57 <= 241  241 - 57 = 184; successful throws = 2  Third throw is double 10 -> 20 <= 184  184 - 20 = 164; successful throws = 3  Fourth throw is single 3 -> 3 <= 164  164 - 3 = 161; successful throws = 4  Fifth throw is single 1 -> 1 <= 161  161 - 1 = 160; successful throws = 5  Sixth throw is triple 20 -> 60 <= 160  160 - 60 = 100; successful throws = 6  Seventh throw is triple 20 -> 60 <= 100  100 - 60 = 40; successful throws = 7  Eighth throw is double 20 -> 40 <= 40  40 - 40 = 0; successful throws = 8 |
| Stephen Bunting  Triple  20  Triple  20  Triple  20  Triple  20  Triple  20  Triple  20  Double  7  Single  12  Double  1  Single  1 | Stephen Bunting won the leg with 6 shots. | We start with 301 points  First throw is triple 20 -> 60 <= 301  301 - 60 = 241; successful throws = 1  .  .  .  Fifth throw is triple 20 -> 60 <= 61  61 - 60 = 1; successful throws = 5  Sixth throw is triple 20 -> 60 > 1  Failed throws = 1  Seventh throw is double 7 -> 14 > 1  Failed throws = 2  Eighth throw is single 12 -> 12 > 1  Failed throws = 3  Ninth throw is double 1 -> 2 > 1  Failed throws = 4  Tenth throw is single 1 -> 1 <= 1  1 - 1 = 0; successful throws = 6 |
| Rob Cross  Triple  20  Triple  20  Triple  20  Triple  20  Double  20  Triple  20  Double  5  Triple  10  Double  6  Retire | Rob Cross retired after 3 unsuccessful shots. | We start with 301 points  First throw is triple 20 -> 60 <= 301  301 - 60 = 241; successful throws = 1  ...  Fifth throw is double 20 -> 40 <= 61  61 - 40 = 21; successful throws = 5  Sixth throw is triple 20 -> 60 > 21  Failed throws 1  Seventh throw is double 5 -> 10 <= 21  21 - 10 = 11; successful throws 6  Eighth throw is triple 10 -> 30 > 11  Failed throws 2  Ninth throw is double 6 -> 12 > 11  Failed throws 3  **Retire** -> player gives up after 3 unsuccessful throws |