# Problem 1 – Quest in the Woods

A knife and compass in the woods

Description automatically generated

*A group of friends preparing for an adventurous quest into the deep woods. Their success hinges on planning and resource management. Your task is to help them strategize and calculate the necessary provisions for their journey.*

Write a program that **calculates** and **manages** their **provisions** and **energy** during their quest in the woods.

**Planning the Expedition:** Before setting off on their adventure, the group must gather essential supplies.

**Input Details:** You will receive input for the following aspects and features of their adventure:

* **Days of Adventure:** How many days will their quest last? An integer **between 1 and 100**
* **Number of Adventurers:** How many brave souls are venturing into the woods? An integer **between 1 and 1000**
* **Initial Energy:** The **total energy** of the **entire group** before they set off. A real number **between 1 and 50000**
* **Water per Person per Day:** The amount of water each adventurer needs daily. A real number **between 0.00 and 1000.00**
* **Food per Person per Day:** The quantity of food each adventurer requires daily. A real number **between 0.00 and 1000.00**
* **Daily Energy Loss:** For each day of the adventure, you will receive the amount of energy lost due to activities like chopping wood. Enter a real number **between 0.00 and 1000.00**

**Input Order:**

* First, you will receive **the days of the adventure**, **the count of the participants,** and the **group's energy**.
* Afterward, you will receive needed **provisions for a day for one person**:
  + **Water**
  + **Food**
* **For each of the days**, you are going to receive the **amount of energy loss** from chopping wood.

**Planning the Expedition:**

* **Calculating Supplies:** Your first task is to **calculate the total water and food required** for the entire journey based on the **number of days**, **count of adventurers**, and **daily consumption rates**.
* **Energy Management -** As you plan each day of their expedition:
  + **Every day** they would chop wood and **lose** **a certain amount of energy**. For each of the days, you are going to receive the amount of **energy lost** from chopping wood. The program should **end** if the energy reaches **0** or **less**.
  + **Every second day**, simulate their replenishment by **drinking water**, which **boosts their energy by 5%** of their current level and **reduces their water supply by 30%.**
  + **Every** **third** day simulate their **meal consumption**, which **boosts their energy by 10%** and **reduces their food supplies by the following amount:** {currentFood}/{countOfPeople}

**The chopping of wood, the drinking of water, and the eating happen in the order above.**

If they would have **enough** **energy** to finish the quest, print the following message:

"You are ready for the quest. You will be left with {energyLevel} energy!"

If they are going to **run out of energy**, print the following message and the **food** and **water** they were left with **before** they ran out of energy:

"You will run out of energy. You will be left with {food} food and {water} water."

## Input / Constraints

* **On the 1st line**, you will receive a number **N** - the days of the adventure – **an integer** in the range **[1…100].**
* **On the 2nd line** – the number of participants – **an integer** in the range **[1 – 1000].**
* **On the 3rd line** - the group's energy – **a real number** in the range **[1 - 50000].**
* **On the 4th line** – water per day for one person – **a real number** **[0.00 – 1000.00].**
* **On the 5th line** – food per day for one person – **a real number** **[0.00 – 1000.00].**
* On the next **N** lines – one for each of the days – the amount of **energy loss**– **a real number** in the range **[0.00 - 1000.00].**
* You will **always** have **enough** **food** and **water**.

## **Output**

* The final numbers should be **formatted** to the **second** **digit** after the decimal separator.

### Examples

|  |  |  |
| --- | --- | --- |
| **Input** | | **Output** |
| 10  7  5035.5  11.3  7.2  942.3  500.57  520.68  540.87  505.99  630.3  784.20  321.21  456.8  330 | | You are ready for the quest. You will be left with 658.72 energy! |
| **Comments** | | |
| The **days** are **10,** and the **players** are **7**. The **energy** of the whole **group** is **5035.5**. We receive the **water** and **food,** and we can **calculate** the needed amount of both for the whole quest:  **Total water: 10 \* 7 \* 11.3 = 791**  **Total food: 10 \* 7 \* 7.2 = 504**  The energy lost on the first day: **5035.5 – 942.3 = 4093.2**  When we reach the **second** **day**, the energy will become **3772.26 (the players lose 500.57 and then boost their energy by 5% when they drink water),** and the water will become **553.7**.  When we reach the **third** **day**, the energy will become **3576.74 (the players lose 520.68 and then boost their energy by 10% when they eat food),** and the food **432**.  Make all the calculations, and in the end, you must have **658.72** energy left and **132.94** water, and **317.39** food left. | | |
| **Input** | **Output** | |
| 12  6  4430  9.8  5.5  620.3  840.2  960.1  220  340  674  365  345.5  212  412.12  258  496 | You will run out of energy. You will be left with 229.17 food and 118.59 water. | |

### JS Examples

The input will be provided as an array of strings.

|  |  |
| --- | --- |
| **Input** | **Output** |
| (["10",  "7",  "5035.5",  "11.3",  "7.2",  "942.3",  "500.57",  "520.68",  "540.87",  "505.99",  "630.3",  "784.20",  "321.21",  "456.8",  "330"]) | You are ready for the quest. You will be left with 658.72 energy! |
| **Comments** | |
| The **days** are **10,** and the **players** are **7**. The **energy** of the whole **group** is **5035.5**. We receive the **water** and **food,** and we can **calculate** the needed amount of both for the whole quest:  **Total water: 10 \* 7 \* 11.3 = 791**  **Total food: 10 \* 7 \* 7.2 = 504**  The energy lost on the first day: **5035.5 – 942.3 = 4093.2**  When we reach the **second** **day**, the energy will become **3772.26 (the players lose 500.57 and then boost their energy by 5% when they drink water),** and the water will become **553.7**.  When we reach the **third** **day**, the energy will become **3576.74 (the players lose 520.68 and then boost their energy by 10% when they eat food),** and the food **432**.  Make all of the calculations, and in the end, you must have **658.72** energy left and **132.94** water, and **317.39** food left. | |

|  |  |
| --- | --- |
| **Input** | **Output** |
| (["12",  "6",  "4430",  "9.8",  "5.5",  "620.3",  "840.2",  "960.1",  "220",  "340",  "674",  "365",  "345.5",  "212",  "412.12",  "258",  "496"]) | You will run out of energy. You will be left with 229.17 food and 118.59 water. |