1030 – Discovering Gold

You are in a cave, a long cave! The cave can be represented by a **1 x N** grid. Each cell of the cave can contain any amount of gold.

Initially you are in position **1**. Now each turn you throw a perfect **6** sided dice. If you get **X** in the dice after throwing, you add **X** to your position and collect all the gold from the new position. If your new position is outside the cave, then you keep throwing again until you get a suitable result. When you reach the $\mathbf{N}^{th}$ position you stop your journey. Now you are given the information about the cave, you have to find out the **expected** number of gold you can collect using the given procedure.

Input

Input starts with an integer **T (≤ 100)**, denoting the number of test cases.

Each case contains a blank line and an integer **N (1 ≤ N ≤ 100)** denoting the dimension of the cave. The next line contains **N** space separated integers. The $\mathbf{i}^{th}$ integer of this line denotes the amount of gold you will get if you come to the $\mathbf{i}^{th}$ cell. You may safely assume that all the given integers will be non-negative and no integer will be greater than **1000**.

Output

For each case, print the case number and the expected number of gold you will collect. Errors less than $\mathbf{10}^{-6}$ will be ignored.

Sample Input	Output for Sample Input
3 1 101 2 10 3 3 3 6 9	Case 1: 101.0000000000 Case 2: 13.000 Case 3: 15