Problema 2018.4.1 – Coin sets

The National Bank has descovered in its vaults large amounts of coins of various values from the period of the Socialist Republic of Romania. The Bank wants to sell the coins to collectors, in sets. The coins have the nominal values of 5 bani, 15 bani, 25 bani, 1 leu (100 bani), 3 lei (300 bani) and 5 lei (500 bani).

The packaging system must check that a group of coins can be bagged as a set. A valid coin set contains coins of all denominations, has a total number of coins between 8 and 20, the total nomical value of the coins is less than 29 lei (2900 bani) and the majority of the coins in the set have nominal values less than 1 leu.

Requirement

Write a program that receives as input the set of coins (by the ennumeration of the nominal value of the coins, expressed in bani) and displayes which of the sets are usefull and the total ratio of useless sets (the ratio of useless sets to the total number of sets). A coin set is considered usefull if it respect all the previous mentioned conditions, that are to be fulfilled simultaneous.

Input data

One will read from the keyboard (the stdin stream) the following data: on a first line an integer number **n** representing the number of sets. Then, one will read the **n** sets, as follows: one reads from a line the number of coins in that set, **k**, and on the following line **k** integer numbers that represent the nominal values (in bani) of the respectivee coins, separated by space.

Output data

The program will display on screen (the standard output stream) on a first line **n** integer numbers, representing if one of the input sets is useful (1) or useless (0), values separated by space, and on the following line the ratio of useless sets, displayed with two decimals, with rounding.

ATTENTION to the compliance to the problem requirements: the display of results must be done EXACTLY as required! In other words, on the standard output stream there will be nothing displayed in addition to the problem requirements; following the automatic evaluation, any supplemental character displayed, or any display different than the requirements, will produce an eroneous result and will lead to the „Reject" of the solution.

Restrictions and remarks

1. $1 \leq \mathbf{n} < 100$
2. $1 \leq \mathbf{k} < 100$
3. **Warning:** According to the chosen programming language, the file containing the code must have one of the extensions .c, .cpp, .java, or .m. The web editor does not add automatically these extensions and the lack of the extensions leads to the impossibility of program compilation!
4. **Warning**: The source file must be named by the candidate as: <name>.<ext> where name is the family name (last name) of the candidate and the extension is the one chosen according to the previous warning. Attention to the restrictions imposed by the Java language regarding the class name and the file name!

Example

Input	Output	Explanation
5 12 500 5 15 15 25 300 300 15 100 25 5 15 7 5 15 25 100 300 500 5 11 500 300 100 25 15 5 500 500 500 500 5 8 5 15 25 100 300 500 100 300 16 5 5 15 25 100 5 5 15 25 300 25 15 100 5 15 25	1 0 0 0 0 0.8	One will read 5 sets. The first set contains 12 coins: 2 coins of 5 bani, 4 coins of 15 bani, 2 coins of 25 de bani, 1 coin of 1 leu, 2 coins of 3 lei, 1 coin of 5 lei. The sum of values of the coins is 1320 bani, or 13,20 lei. The set contains 8 coins (more than 6) with values less than 1 leu. This set is usefull. The next set contains 7 coins: 2 coins of 5 bani, 1 coin of 15 bani, 1 coin de 25 of bani, 1 coin of 1 leu, 1 coin of 3 lei, 1 coin of 5 lei. The set is not usefull because the total number of coins is less than 8. The next set contains 11 coins: 2 coins of 5 bani, 1 coin of 15 bani, 1 coin of 25 de bani, 1 coin of 1 leu, 1 coin of 3 lei, 5 coins of 5 lei. The set is not usefull because the total nomical value of the coins is 29,50 lei, which is more than 29 lei. The next set contains 8 coins: 1 coin of 5 bani, 1 coin of 15 bani, 1 coin of 25 de bani, 2 coins of 1 leu, 2 coins of 3 lei, 1 coin of 5 lei. The sum of nominal values of the coins is 1345 bani, or 13,45 lei. The set is not usefull because it contains only 3 coins (less than 4) with nominal value less than 1 leu. The next set contains 16 coins: 5 coins of 5 bani, 4 coins of 15 bani, 4 coins of 25 bani, 2 coins of 1 leu, 1 coin of 3 lei. The set is not usefull because it does not contain any 5 lei coin. Out of the five sets, only the firs set is usefull, such that one will display **1 0 0 0 0** And the ratio of useless sests, that is 4/5=**0.8**.; The final display is then **1 0 0 0 0** **0.8**

Work time: 120 minutes