

## 8511 World Cup

The 2018 World Cup will be hosted in Russia. 32 national teams will be divided into 8 groups. Each group consists of 4 teams. In group matches, each pair (unordered) of teams in the group will have a match. Top 2 teams with the highest score in each group will advance to eighth-finals. Winners of each eighth-final will advance to quarter-finals. Then, the winners of each quarter-final will advance to semi-finals. Eventually, the World Champion will be the winner of the World Final which is played between the two winners of the semi-finals.

Each match is labeled with a match ID sequenced from 1 to 63, with group matches followed by eighth-final matches followed by quarter-final matches followed by semi-finals matches and finally the final match.

Zhuojie is going to watch the 2018 World Cup. Since the World Champion of ACM-ICPC is very rich, he decides to spend 0.01% of his daily salary to buy tickets. However, there are only match IDs on the tickets and the prices are missing. Can you calculate how much *Google* pays *Zhuojie* every workday? Note that Zhuojie can buy multiple tickets for one match.

### Input

The input starts with one line containing exactly one integer  $T$ , the number of test cases.

Each test case contains 3 lines. The first line contains 5 integers, indicating the ticket price for group match, eighth-final match, quarter-final match, semi-final match and the final match. The second line contains one integer  $N$ , the number of tickets *Zhuojie* buys. The third line contains  $N$  integers, each indicating the match ID on the ticket.

### Output

For each test case, output one line containing 'Case # $x$ :  $y$ ' where  $x$  is the test case number (starting from 1) and  $y$  is daily salary of *Zhuojie*.

### Limits:

- $1 \leq T \leq 100$ .
- $1 \leq N \leq 10^5$ .
- $1 \leq \text{match price} \leq 1000$ .
- $1 \leq \text{match ID} \leq 63$ .

### Sample Input

```
1
11 12 13 14 15
2
1 49
```

### Sample Output

```
Case #1: 230000
```