

Member card

XYZ supermarket system has many members. Each member has a membership card. Membership card is linked to one of classes, updated automatically when the total purchase value reaches the specified threshold:

- Starter: The total purchase value of 1 million or more
- Gold: The total purchase value of 20 million VND or more
- Diamond: The total purchase value of VND 50 million or more
- Platinum: The total purchase value of VND 200 million or more

When buying a new item, members will receive a discount on the sale price according to the membership card

- Starter: 2% discount
- Gold: 3% discount
- Diamond: 5% discount
- Platinum: 7% discount

Please implement the program to calculate the amount of discount for each purchase of customers.

Input

- The first line contains the number n , which is the number of items purchased ($n \leq 10^5$)
- The next line contains n integers, corresponding to the selling price of n products in the correct order of purchase time

Output

Print in chronological order the amount of discount for n products, the resulting output separated by spaces

Example

Input:

5
500000 2000000 6000000 50000000 3000000

Output:

0 0 120000 1000000 150000