Q1. (Marks 15)

Unimart is offering a dhamaka offer.

Terms and conditions to gain the offer as follows:

Unimart will provide a shopping bag which you can carry W weight at maximum load. (If you try to load more than W weight then it will fall on the ground and you will lose the offer forever)

Unimart has N < 10 products with weight w1, w2, w3...etc. You can get only 1 product for each item.

Input:

W N maximum weight and number of products.

Find the set of products and their sum so that you can use the maximum weight of your bag capacity. N integers represent weight product P1, P2....Pn.

Output:

Print selected products set and the sum of these products.

Sample Input:

10 4 8 9 2 4

20 4 10 7 4 5

90 8 23 10 1 7 2 3 4 5

Sample Output:

8 2 Sum: 10

10 5 4 Sum: 19

23 10 1 2 3 4 5 7 Sum: 55

Output product set sequence doesn't matter but you have to find the optimal sum of weight so that maximizes the profit.

Q2 (Marks 15)

Suppose that you are given the following doubly linked list implementation that uses head and tail pointers.

```
struct listNode
{
        int item;
        listNode *next; // keep address of next node
        listNode *prev; // keep address of previous node
};
struct listNode *head; // points to the first node of the list
struct listNode *trail; // points to the last node of the list
```

Implement the function "*void delete(int N)*" that deletes all Mth nodes of the list such that M mod N = 0. For example, if N = 3, the function should delete 3rd node, 6th node, 9th node and so on. The node pointed by head is the 1st node. Your implementation should be as efficient as possible. (10)

Now subtract the smallest integer from each value of the linked list and then show all elements. (5)