Programming Questions:

1. Susan distributes gift boxes to all her friends on Christmas day. She has N such boxes and each box contains some number of chocolates. She wishes to have the same special number of chocolates .So she decides the special count of chocolates. However she cannot reduce that special number of chocolates for every boxes.

So she decides to reduce the no: of chocolates for as much boxes as possible so that atleast X boxes have the same special value (no: of chocolates) and this must be as large as possible.

Find the maximum value that Susan can achieve.

Input Specification:

Input1: N, total no: of boxes

Input2: X, No: of boxes that should have the same max no: of chocolates

Input 3: The array representing the number of chocolates within each box

Output Specification:

Output: Max Value that Susan can achieve

Input1:5

Input2:3

Input3: [12,4,9,3,7]

Output: 7

Explanation: Here we need to make special values of 3 boxes equal. So we can reduce the values 12 and 9 to 7 and there is already a box with 7 chocolates. Thus we get 3 boxes with 7 chocolates

**Pseudo Algorithm:**

1. Read the no: of boxes that should have the same maximum value of chocolates and the array containing the total no: of chocolates in each box.

2. Arrange the array in descending order.

3. Make the first k numbers in the array as same by only subtraction (condition given in the question).

4. Return the highest occurring number from the array

**Algorithm:**

boxes(n,k,box)[n is the total number of boxes.k is the no of boxes that should have the same maximum value. The variable, box is the array containing the number of chocolates in each box. ]

1. Read n as 5

2. Read k as 3

3. Read box as 20,10,30,15,35

4. Sort the box in descending order.

5.Get the destination number as dest=box[k-1]

6. Subtract the destination number from the ith number in the array

7.Increment i

8.Repeat steps 6 to 7 till i<k

9.Return box[k-1] as the max. value

**Program Code:**

function boxes(n, k, box)

{

    box.sort(function(a, b){return b - a});

    let i=0;

    const dest=box[k-1];

    var temp;

    while(i<k)

    {

        temp=box[i]-dest;

        box[i]-=temp;

        i++;

    }

    return box[k-1];

}

console.log(boxes(5,3,[20,10,30,15,35]));

**Output:**

20