You have observations of n + m **6-sided** dice rolls with each face numbered from 1 to 6. n of the observations went missing, and you only have the observations of m rolls. Fortunately, you have also calculated the **average value** of the n + m rolls.

You are given an integer array rolls of length m where rolls[i] is the value of the ith observation. You are also given the two integers mean and n.

Return *an array of length*n*containing the missing observations such that the****average value****of the*n + m*rolls is****exactly***mean. If there are multiple valid answers, return *any of them*. If no such array exists, return *an empty array*.

The **average value** of a set of k numbers is the sum of the numbers divided by k.

Note that mean is an integer, so the sum of the n + m rolls should be divisible by n + m.

**Example 1:**

**Input:** rolls = [3,2,4,3], mean = 4, n = 2

**Output:** [6,6]

**Explanation:** The mean of all n + m rolls is (3 + 2 + 4 + 3 + 6 + 6) / 6 = 4.

**Example 2:**

**Input:** rolls = [1,5,6], mean = 3, n = 4

**Output:** [2,3,2,2]

**Explanation:** The mean of all n + m rolls is (1 + 5 + 6 + 2 + 3 + 2 + 2) / 7 = 3.

**Example 3:**

**Input:** rolls = [1,2,3,4], mean = 6, n = 4

**Output:** []

**Explanation:** It is impossible for the mean to be 6 no matter what the 4 missing rolls are.

**Example 4:**

**Input:** rolls = [1], mean = 3, n = 1

**Output:** [5]

**Explanation:** The mean of all n + m rolls is (1 + 5) / 2 = 3.

**Constraints:**

* m == rolls.length
* 1 <= n, m <= 105
* 1 <= rolls[i], mean <= 6