

2028. Find Missing Observations

Solved ●

Medium Topics Companies Hint

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 i^{th} 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.

Constraints:

- $m == \text{rolls.length}$
- $1 \leq n, m \leq 10^5$
- $1 \leq \text{rolls}[i], \text{mean} \leq 6$

Seen this question in a real interview before? 1/5

Yes No

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Hint 1

Hint 2

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