

1634. Add Two Polynomials Represented as Linked Lists Premium

Solved ●

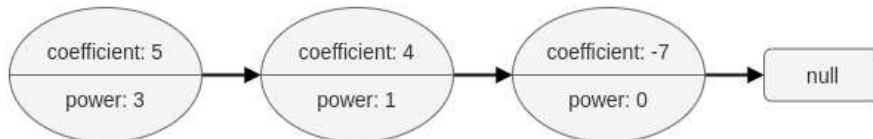
Medium Topics Companies Hint

A polynomial linked list is a special type of linked list where every node represents a term in a polynomial expression.

Each node has three attributes:

- coefficient**: an integer representing the number multiplier of the term. The coefficient of the term $9x^4$ is 9.
- power**: an integer representing the exponent. The power of the term $9x^4$ is 4.
- next**: a pointer to the next node in the list, or **null** if it is the last node of the list.

For example, the polynomial $5x^3 + 4x - 7$ is represented by the polynomial linked list illustrated below:



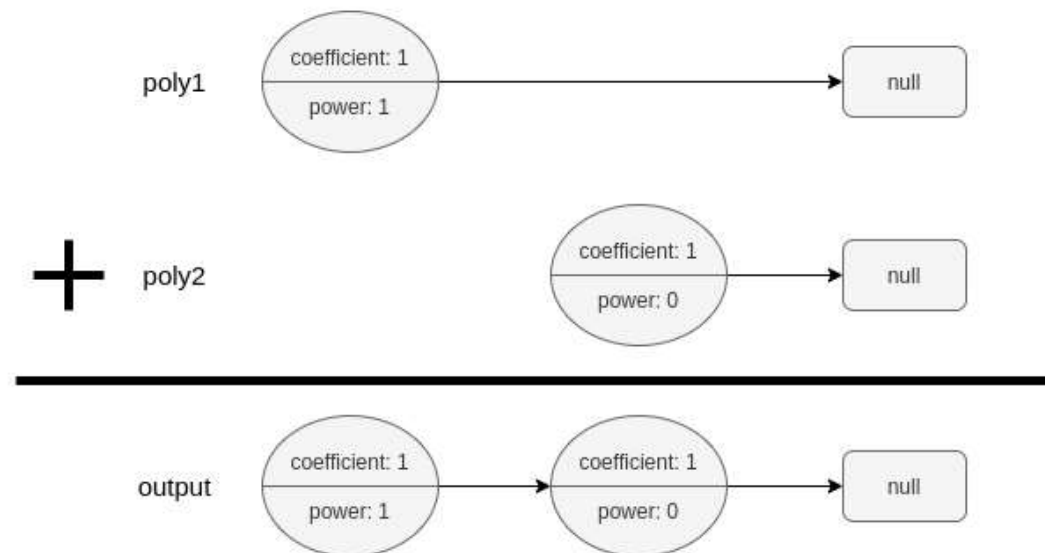
The polynomial linked list must be in its standard form: the polynomial must be in **strictly** descending order by its **power** value. Also, terms with a **coefficient** of 0 are omitted.

Given two polynomial linked list heads, **poly1** and **poly2**, add the polynomials together and return *the head of the sum of the polynomials*.

PolyNode format:

The input/output format is as a list of **n** nodes, where each node is represented as its **[coefficient, power]**. For example, the polynomial $5x^3 + 4x - 7$ would be represented as: **[[5,3],[4,1],[-7,0]]**.

Example 1:



Input: poly1 = [[1,1]], poly2 = [[1,0]]

Output: [[1,1],[1,0]]

Explanation: poly1 = x. poly2 = 1. The sum is x + 1.

Example 2:

Input: poly1 = [[2,2],[4,1],[3,0]], poly2 = [[3,2],[-4,1],[-1,0]]

Output: [[5,2],[2,0]]

Explanation: poly1 = $2x^2 + 4x + 3$. poly2 = $3x^2 - 4x - 1$. The sum is $5x^2 + 2$. Notice that we omit the "0x" term.

Example 3:

Input: poly1 = [[1,2]], poly2 = [[-1,2]]
Output: []
Explanation: The sum is 0. We return an empty list.

Constraints:

- `0 <= n <= 104`
- `-109 <= PolyNode.coefficient <= 109`
- `PolyNode.coefficient != 0`
- `0 <= PolyNode.power <= 109`
- `PolyNode.power > PolyNode.next.power`

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Yes No

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