

# Merge Sorted Array

$m = 3$ ,  $\text{nums1} = [1, 2, 3, 0, 0, 0]$

$n = 3$ ,  $\text{nums2} = [2, 5, 6]$

Process:

Start with pointers:

$p1 = m - 1 = 2$  (last element of  $\text{nums1}$ )

$p2 = n - 1 = 2$  (last element of  $\text{nums2}$ )

$p = m + n - 1 = 5$  (last position in  $\text{nums1}$ ).

Compare  $\text{nums1}[p1] = 3$  and  $\text{nums2}[p2] = 6$ :

Compare  $\text{nums1}[p1] = 3$  and  $\text{nums2}[p2] = 5$ :

Compare  $\text{nums1}[p1] = 3$  and  $\text{nums2}[p2] = 2$ :

Compare  $\text{nums1}[p1] = 2$  and  $\text{nums2}[p2] = 2$ :

$\text{nums2}$  is exhausted ( $p2 = -1$ ), so the process stops.

**Output:** final result:  $[1, 2, 2, 3, 5, 6]$ .