For each index i, use binary search to find the closest number. $O(n \log n)$.

lower bound: $\Omega(n \log n)$ in the comparison based model, because we can reduce element distinctness to this problem. Given $a[0..n-1]$, set $nums1[i] = a[i] + i \cdot \epsilon$ and $nums2[i] = a[i] + n \cdot \epsilon$.

References