Assignment 1 - Solution (AA)

Q-1

2 number → Sum → absolute → maximum

that means 2 +ve biggest or 2 -ve smallest

check sum for both pairs, take absolute & show those two value

(n_1, n_2) (l_1, l_2) having maximum absolute

2 max → O(N)] No need to sort.
2min → O(N)

Sum → O(1)]
Compare → O(1)

final O(N) answer.

[If smallest is positive, then no need to find 2 -ve smallest value,

Question - 2

2 numbers → absolute (means +ve/-ve work same) value

Zero smallest
→ if we think smallest as zero then we have to find such 2 numbers having absolute value same or near by

-ve smallest
→ if we think smallest - largest -ve value (minimum)

find absolute max / absolute min

|min| − |max|

Store i & j that are found

O(N) + O(N) ⇒ O(N)

(large-small) All pair compare, if we found a pair having zero result/near zero → we can stop ⇒ O(N²)

Sort the array O(NlgN) → calculate 2 side elements

S ——— E

(will it be beneficial)?

Q-3

⇒ All three arrays valid check i, j, k

$i<N, j<M, k<K$

$A[i] < B[j]$ && $A[i] < C[k]$ → place $A[i]$

$A[i] == B[j]$ → [No place, move i & k index till next value
$A[i] != B[j]$
$A[i] != C[k]$
→ [Same for $i \& j$

$A[i] == B[j]$ && $A[i] == C[k]$

[place $A[i]$, move i, j, k index till next value

$B[j] < A[i]$ && $B[j] < C[k]$

place $B[j]$ ← $B[j] == C[k]$ ($B[j] != A[i]$)

$C[k] < A[i]$ && $C[k] < B[j]$ → place $C[k]$

[$i<N, j<M$ || $i<N, k<K$ || $j<M, k<K$]

place A ← $A[i] < B[j]$ — Same here — Same here

No place ← $A[i] == B[j]$

place B ← $B[j] < A[i]$

$i<N$ || $j<M$ || $k<K$

(place all) (place all) (place all)