1. hashing. $O(n)$ expected.

2. reduce to distinct element.

3. reduce to integer sorting. after sorting, only need $O(n)$ by monotone pointers.
for integer sorting:
$O(n\sqrt{\log\log n})$ randomized [1].
$O(n \log\log n)$ deterministic [2].

References

[1] Y Han and M Thorup. Sorting integers in o (n log log n) expected time and linear space. In *IEEE Symposium on Foundations of Computer Science (FOCS02)*, 2002.

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