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

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

3. for the lower bound, $\Omega(n\log n)$ in the degree-d algebraic decision tree model [1]. we can also reduce the set intersection problem to this, i.e. deciding whether two sets $\{x_1, \ldots, x_n\}$ and $\{y_1, \ldots, y_n\}$ intersect, by negating one of the sets.

References

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