Q10 Solution

We can use arraylist and a hashtable.

Algorithm:
From the first set A stored as an arraylist, hash all the values to an index in the hashtable.
Iterate over the set B and see if we could find a value at that index in the hashtable.
If found, then it is in the intersection.

Since finding the value in a hashtable table takes expected O(1) time. So, for n sized set, it will take expected of O(n) time for the algorithm.

In worst case analysis, you had to write that the adversary can give such value which are hashed to the same index and hence finding the value would have taken O(n) time. And overall worst case complexity was O(n^2).