

1. Classes  $P$  and  $NP$ .  $NP$ -hard and  $NP$ -complete problems. Examples of  $NP$ -complete problems.

2. Consider two sets of integers  $A$  and  $B$  (each of size of  $n$ ). Neither  $A$  nor  $B$  can contain duplicates, but they can share some values. We want to compute the difference of these two sets:  $A \setminus B$ . Design an algorithm that guarantees  $O(n \log n)$  worst-case time.  
[Remember:  $A \setminus B = \{x : x \in A \text{ and } x \notin B\}$ .]