

Foundation of Computer Science (CS60001)

Tutorial-10

November 10, 2010

1. Explain whether the following statement is True/False: An $O(n_a^k)$ reduction algorithm from A to B followed by a deterministic $O(n_b^k)$ algorithm for B yields an $O(n^k)$ deterministic algorithm for A (Here n is the input size, and k is a positive integer constant > 1).
2. Prove that, the language $\{0^m 1^k \mid m \text{ has a divisor } d \text{ with } 2 \leq d \leq k\}$ is in P.
3. Prove that, 2-CNF is in P.