

**Homework Assignment #2**  
**Due: Friday, October 9, 2020 at 5:00 p.m.**

1. Let  $T(n)$  be an increasing function. Prove that if  $L \in NTIME(T(n))$  then  $L^* \in NTIME(n \cdot T(n))$ .

Your proof should be quite detailed, using the definition of  $NTIME$  in terms of non-deterministic (single-tape) Turing machines.