

## FLAC Assignment 9

**Exercise 1.** In class, we showed that the problem of deciding  $A_{\text{TM}}$  is reducible to the problem of deciding  $HALT_{\text{TM}}$  (i.e.,  $A_{\text{TM}} \leq HALT_{\text{TM}}$ ). For this exercise, show the converse, that  $HALT_{\text{TM}}$  is reducible to the problem of deciding  $A_{\text{TM}}$  (i.e.,  $HALT_{\text{TM}} \leq A_{\text{TM}}$ ).

**Textbook Exercise 5.3.**

**Textbook Exercise 5.9.**

**Textbook Exercise 5.17.**

**Textbook Exercise 5.18.**

**Textbook Exercise 5.21.** (Worth 20 points)

**Textbook Exercise 5.28.**

**Textbook Exercise 5.30(a,b,c).**