CSci 3501 Assignment 8
Due Friday, November 7th in class

Problem 1 (10 points). Sipser, exercise 1.29b p. 88, 1.46ac, 1.47 p. 90.

Problem 2 (6 points). Sipser, exercise 1.55c,e,f p. 91.

Problem 3 (2 points). Sipser, exercise 2.1a,d p. 128.

Problem 4 (6 points). Consider the following grammar:

$$S \rightarrow SaS \mid aS \mid \epsilon$$

1. Prove that the grammar is ambiguous by showing a string that has at least two different parse trees; show the parse trees.

2. What language does the grammar generate?

3. Is it possible to generate the same language by an unambiguous grammar? If yes, please write the grammar and briefly explain why you think it is unambiguous. If not, please explain why.

Problem 5 (6 points). Sipser, exercises 2.4b,c and 2.6b p. 129.

Problem 6 (8 points). Sipser, exercise 2.14 p. 129.