Computer Science 4602

Fall 2020

Quiz 2

1. Draw a state transition diagram of a FSM that decides language over alphabet . There is only one string in . Be sure to mark the start state and accepting states. Be sure there is a transition out of every state for every symbol in the alphabet.

2. Draw a state transition diagram of a FSM that decides language *B* = { and the next-to-last symbol in is } Some of the strings in *B* are , , and . Be sure to mark the start state and accepting states.

**Hint.** Have a state for each pair of symbols that might be the last two in a string. The state for strings that end on can serve as a start state.

3. Prove that language over alphabet is not regular. Make your proof clear and readable, but not verbose. Do not expect the reader to guess what you are doing.