Quiz 2

Problem 1. True or False (no justification needed):

A. There is a regular expression for the language \((a \cup ab)^* \cap \text{noprefix}(b^*c)\) where \text{noprefix} was defined in problem set 3.

B. The DFA-acceptable languages are closed under complement, but the NFA-acceptable languages are not.

C. A subset of a regular language is necessarily regular.

D. Every finite language is regular.

Problem 2. Using the procedure seen in class, convert the regular expression \((ab \cup b)\) into an NFA. Don’t “simplify” the machine.

Problem 3. By the conventions of your text and lecture, an NFA is a 5-tuple \(M = (Q, \Sigma, \delta, q_0, F)\) where function \(\delta\) maps \(\) to \(\) (Fully specify the domain and range).

Problem 4 What is the product construction and what is it used to show?