

Problem Set 4 — Due January 31, 2002

Problem 1. Page 86, Exercise 1.16, part (b), postponed from prior week.

Problem 2. Consider applying the product construction to NFAs $M_1 = (Q_1, \Sigma, \delta_1, q_1, F_1)$ and $M_2 = (Q_2, \Sigma, \delta_2, q_2, F_2)$ in order to show that the NFA-acceptable languages are closed under intersection.

Part A. Formally specify the product machine $M = (Q, \Sigma, \delta, q_0, F)$.

Part B. Does the construction work—that is, is $L(M) = L(M_1) \cap L(M_2)$? Informally argue your conclusion.