M_A

M_B

$M \quad Q = Q_A \times Q_B \times \{0,1\}$ Perfect

$\delta_M((q_A, q_B, 0), a)$

$= (\delta_A(q_A, a), q_B, 1)$

$\delta_M((q_A, q_B, 1), a)$

$= (q_A, \delta_B(q_B, a), 0)$

$F = F_A \times F_B \times \{0\}$

$Q_A \times Q_B \cup Q_B \times Q_A$

$x_1 y_1 x_2 y_2 \cdots x_k y_k$

$x_i, y_i \in \Sigma^*$

$x_1 x_2 \cdots x_k \in D$

$y_1 \cdots y_k \in$

$a a b a b b \ldots$

$Q = Q_A \times Q_B$

$\delta_Q((q_A, q_B), a) =$

$\{ (\delta_A(q_A, a), q_B),$

$(q_A, \delta_B(q_B, a)) \}$