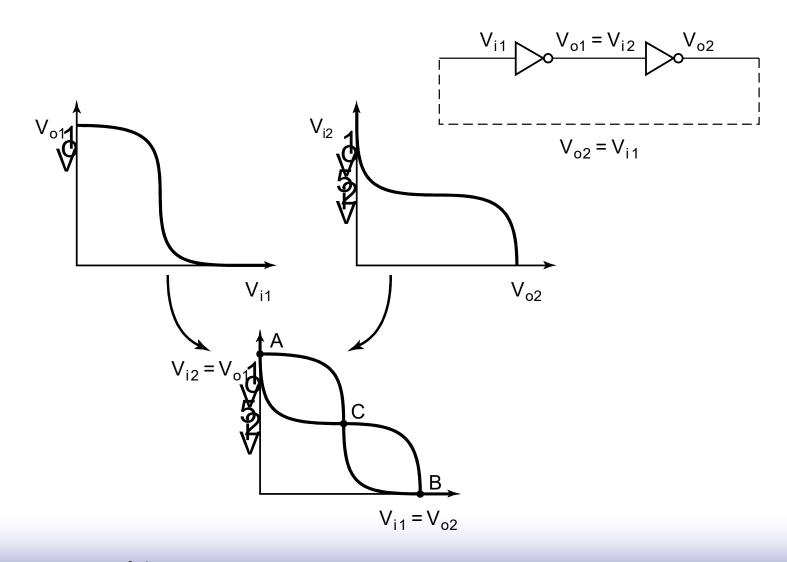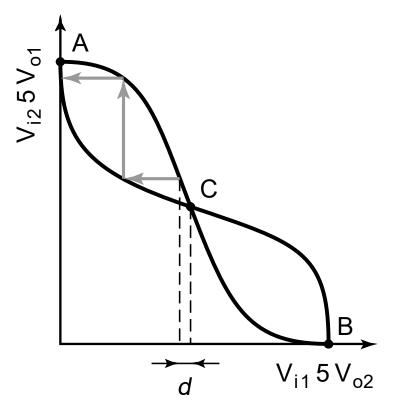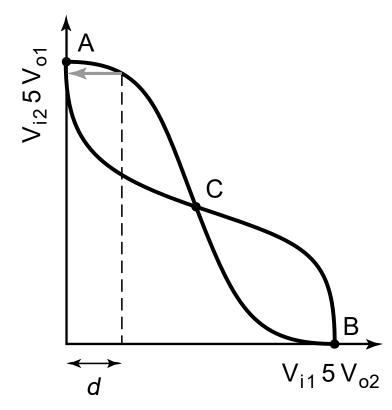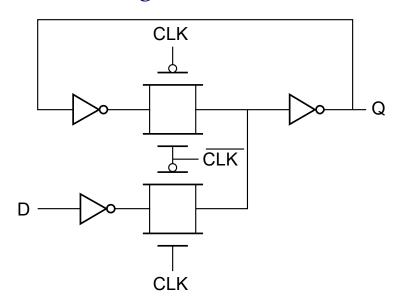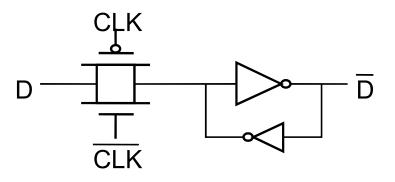# *Positive Feedback: Bi-Stability*

Meta-Stability

Gain should be larger than 1 in the transition region

Writing into a Static Latch

Use the clock as a decoupling signal,
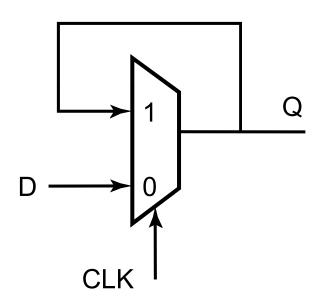that distinguishes between the transparent and opaque states

Converting into a MUX

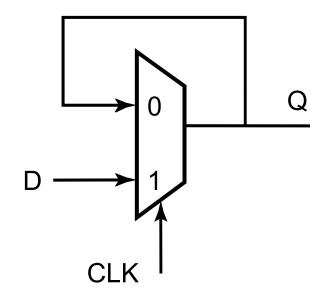Forcing the state
(can implement as NMOS-only)

Mux-Based Latches

Negative latch
(transparent when CLK= 0)

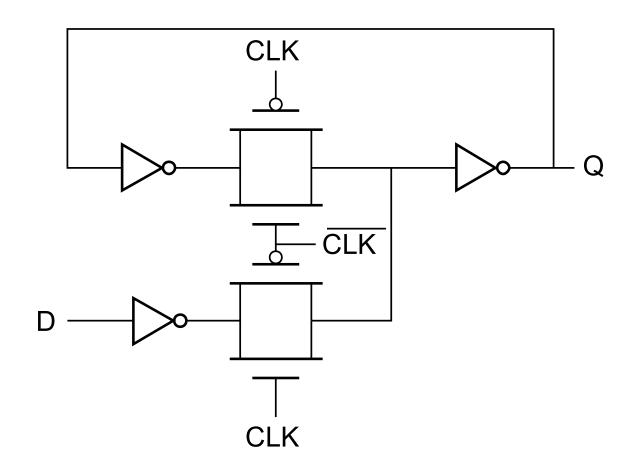**Positive latch**
(transparent when CLK= 1)

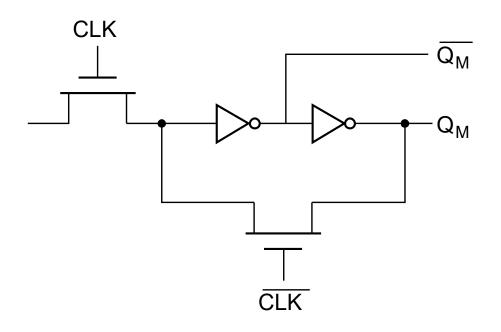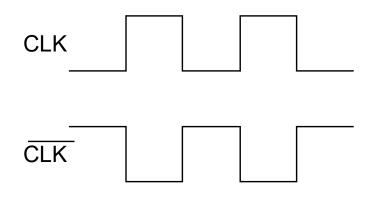$$Q = \overline{Clk} \cdot Q + Clk \cdot In$$

$$Q = Clk \cdot Q + \overline{Clk} \cdot In$$

Mux-Based Latch

Mux-Based Latch

NMOS only

Non-overlapping clocks