\[ X = A + B \]
\[ Y = \overline{BC} \]

\[ F = \overline{XY} \]
\[ = \overline{(A+B)(BC)} \]
\[ = \overline{AB} + \overline{A\overline{B}} \]

<table>
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<tr>
<th>A</th>
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<th>C</th>
<th>X</th>
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\[
\overline{A} \overline{C} \rightarrow F \]
\[ on \]
\[
\overline{A} \overline{B} \overline{C} \rightarrow F \]
\[ on \]
\[ A \overline{B} \rightarrow F \]
Using Fig 4.8
\[ R_{on} = 100 \text{k}\Omega \quad C = 0.01 \mu F \]

![ Circuit Diagram ]

**High to Low**

Assume initial value = "1"

\[ T = RC = 100k \cdot 0.01 \mu F = 86 \frac{1}{s} \]
Low-to-High

\[ T = RC = 200k \times 0.001 \text{F} = 200 \times 0.001 \text{s} = 0.2 \text{s} \]

Time interval for charging up.

Graph showing voltage over time with labels:
- \( V_{dd} \) and \( V_{dd} \) over time
- Timings: 0ns, 1ns, 2ns, 3ns, 4ns
- Channels: A, B, X, Y, F

Glitch indicated at certain time points.