

PROB3 Region IV

Q_2 SAT

$$V_0 < V_{in} - 0.8$$

Q_1 LIN

$$|V_{DSP}| > |V_{9SP}| - |V_{TP}|$$

$$|V_{DSP} - V_0| > |V_{in} - 5| - |-1.9V|$$

$$I_{Dsn} = 1.35 \times 10^{-3} \left(V_{in} - 0.8 - \frac{V_0}{2} \right) V_0 \quad I_{Dsp} = 1.35 \times 10^{-3} \left(\frac{4.2 - V_{in}}{2} \right)^2$$

Region V

$$Q_2 = OFF$$

$$Q_1 = LIN$$

$$I_{Dq} = I_{Dsp} = 0$$