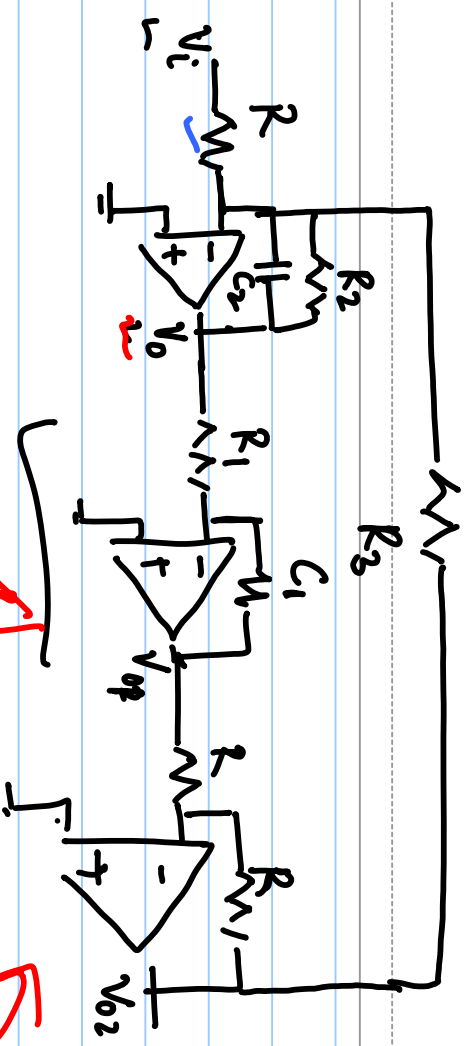
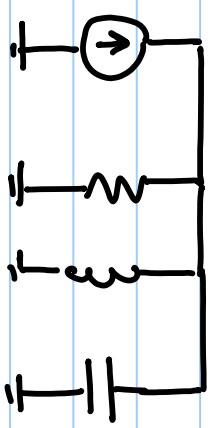
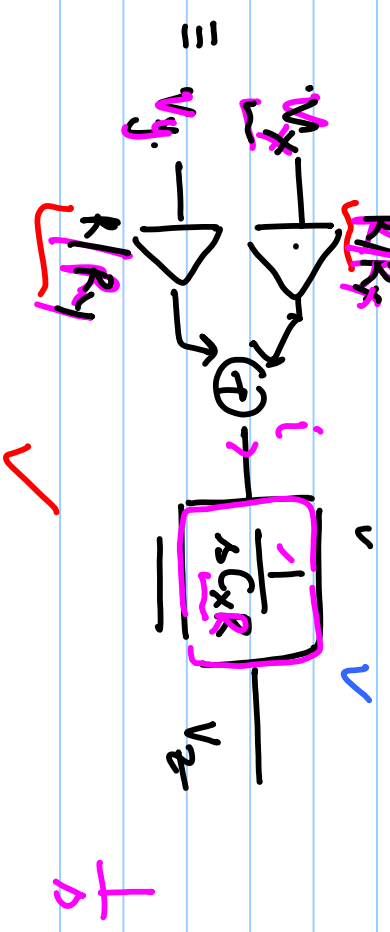
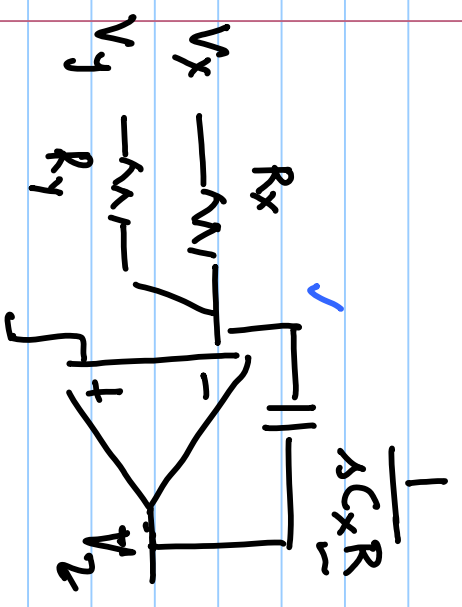
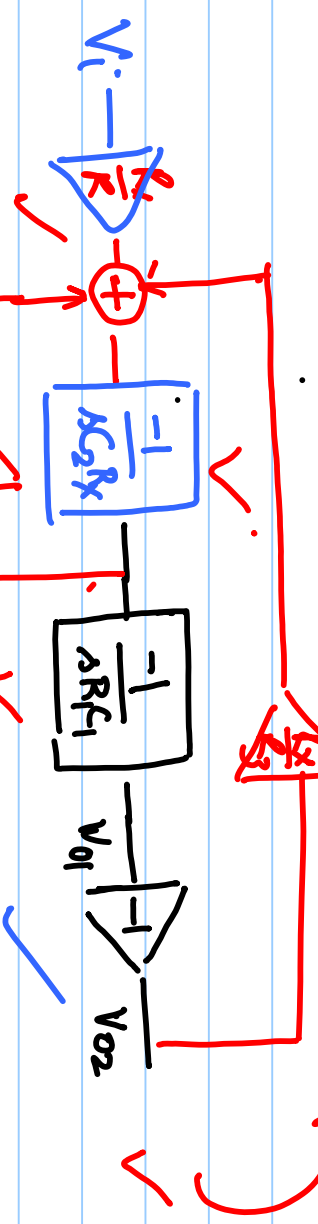


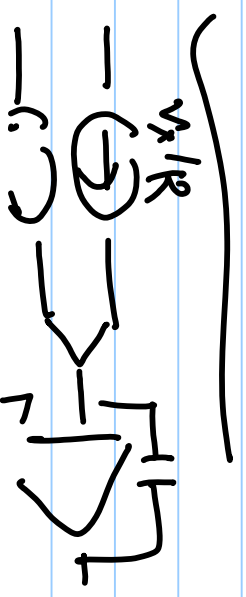
lecture # 32



$$\frac{1}{sRC} = \frac{k}{s}$$



$$V_x \rightarrow \frac{1}{sCR} = \frac{\omega}{s}$$



$$\frac{V_0}{V_i} = \frac{s / \omega_p Q_p}{\frac{s^2}{\omega_p^2} + \frac{s}{\omega_p Q_p} + 1}$$

$$V_0 \left[\frac{s^2}{\omega_p^2} + \frac{s}{\omega_p Q_p} + 1 \right] = V_i \left[\frac{s}{\omega_p Q_p} \right] \checkmark$$

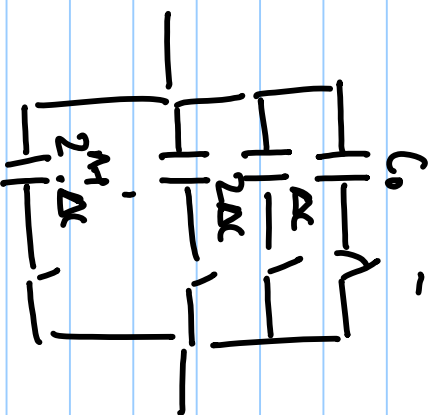
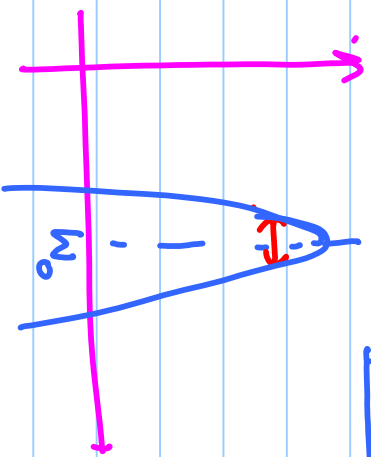
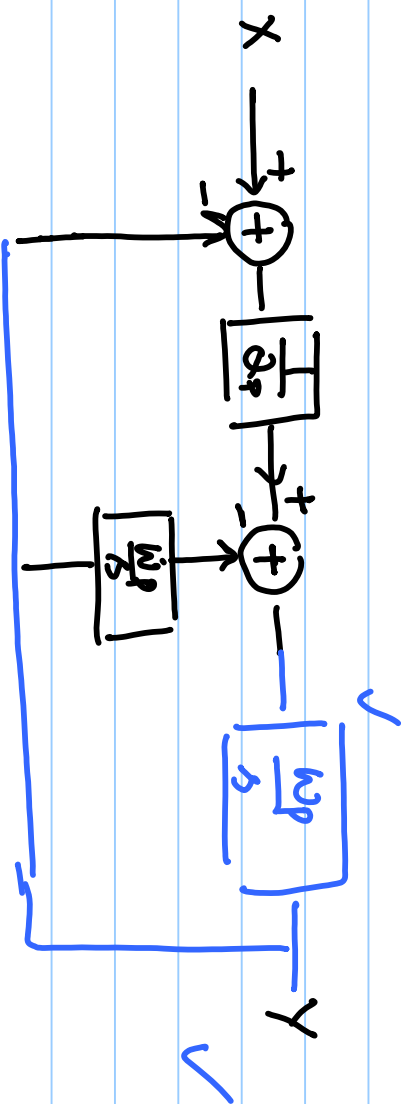
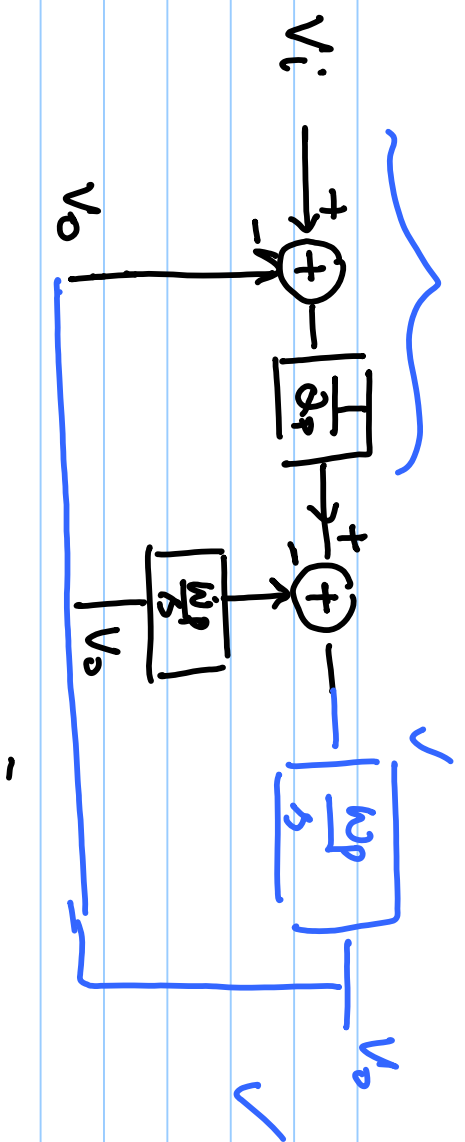
$$V_0 \left[\frac{1}{\omega_p^2} + \frac{1}{\omega_p Q_p} \cdot \frac{1}{s} + \frac{1}{s^2} \right] = V_i \frac{1}{\omega_p Q_p} \cdot \frac{1}{s}$$

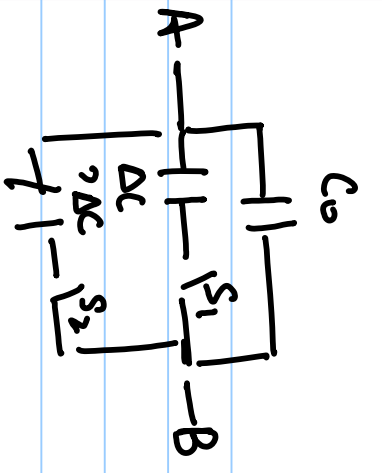
$$V_0 \left[\frac{1}{\omega_p^2} + \frac{1}{s^2} \right] = (V_i - V_0) \frac{1}{\omega_p Q_p} \cdot \frac{1}{s}$$

$$V_0 \left[1 + \frac{\omega_p}{s} \cdot \frac{\omega_p}{s} \right] = (V_i - V_0) \frac{\omega_p}{Q_p} \cdot \frac{1}{s}$$

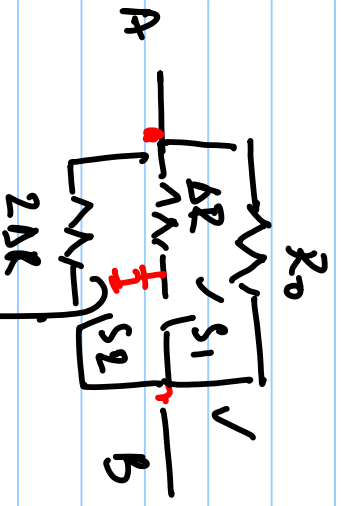
$$V_0 = (V_i - V_0) \frac{\omega_p}{Q_p} \cdot \frac{1}{s} - \frac{\omega_p^2}{s^2} V_0$$

$$V_0 = \left[(V_i - V_0) \frac{1}{Q_p} - \frac{\omega_p}{s} V_0 \right] \frac{\omega_p}{s}$$





$$C_{AB} = C_0, \quad C_0 + \Delta C, \quad C_0 + 2\Delta C, \quad C_0 + 3\Delta C$$



$$R = \frac{1}{\frac{1}{R_0}}, \quad \frac{1}{\frac{1}{R_0} + \frac{1}{2\Delta R}}, \quad \frac{1}{\frac{1}{R_0} + \frac{1}{\Delta R}}, \quad \frac{1}{\frac{1}{R_0} + \frac{1}{\Delta R} + \frac{1}{2\Delta R}}$$

