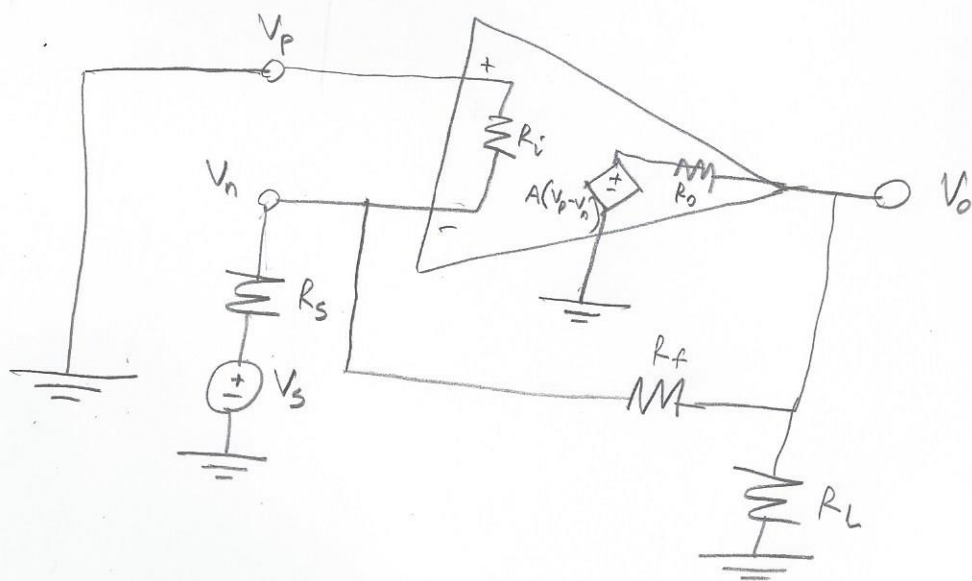


①



$$a) \frac{V_o - V_n}{R_f} + \frac{V_o - A(V_p - V_n)}{R_o} + \frac{V_o}{R_L} = 0$$

$$\frac{V_n - V_o}{R_f} + \frac{V_n - V_s}{R_s} + \frac{V_n - V_p}{R_i} = 0$$

$$\frac{V_n}{R_f} - \frac{V_o}{R_f} + \frac{V_n}{R_s} - \frac{V_s}{R_s} + \frac{V_n}{R_i} - \frac{V_p}{R_i} = 0$$

$$R_s \left[V_n \left(\frac{1}{R_f} + \frac{1}{R_s} + \frac{1}{R_i} \right) - \frac{V_p}{R_i} - \frac{V_o}{R_f} \right] = V_s$$

$$\frac{V_o}{R_f} - \frac{V_n}{R_f} + \frac{V_o}{R_o} - \frac{A(V_p - V_n)}{R_o} + \frac{V_o}{R_L} = 0$$

$$V_o \left(\frac{1}{R_f} + \frac{1}{R_o} + \frac{1}{R_L} \right) = \frac{V_n}{R_f} + \frac{A(V_p - V_n)}{R_o}$$

$$V_o = \frac{\frac{V_n}{R_f} + \frac{A(V_p - V_n)}{R_o}}{\left(\frac{1}{R_f} + \frac{1}{R_o} + \frac{1}{R_L} \right)}$$