

Another Mason's Rule Example

BEL 3.657

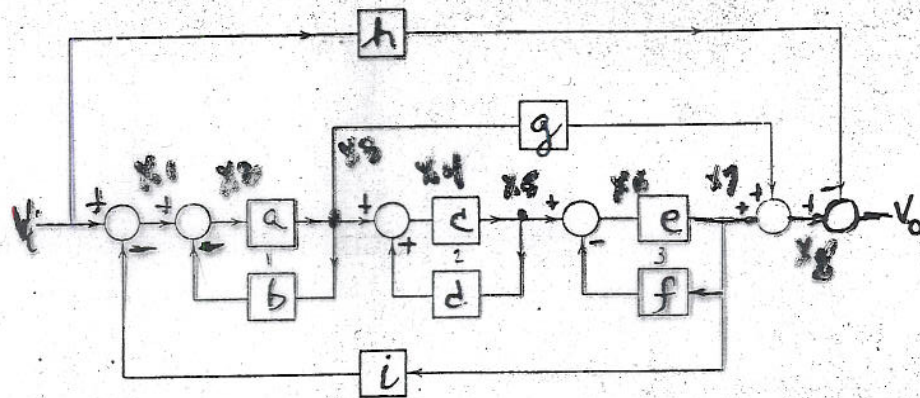
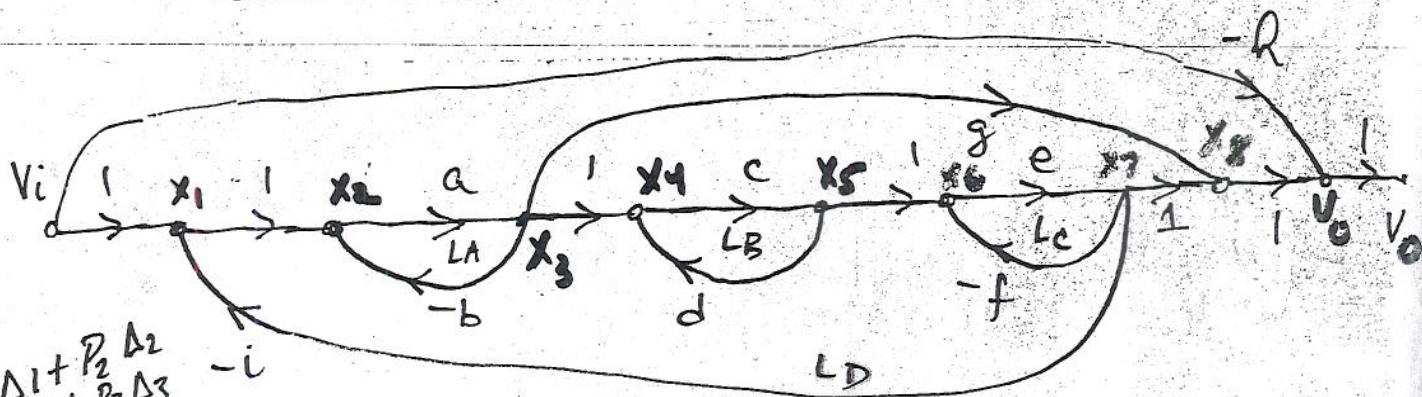


Figure 2.13 Block diagram for gain-expression example.



$$\frac{V_o}{V_i} = \frac{P_1 \Delta_1 + P_2 \Delta_2 + P_3 \Delta_3}{\Delta}$$

$$P_1 = ace \quad P_2 = ag \quad P_3 = -h$$

$$L_A = -ab \quad L_B = cd \quad L_C = -ef \quad L_D = -acei$$

$$\Delta = 1 - (L_A + L_B + L_C + L_D) + (L_A L_B + L_A L_C + L_B L_C) - (L_A L_B L_C)$$

$$\Delta_1 = 1 \quad (\text{All loops Touch it})$$

$$\Delta_2 = ? \quad \text{THROW AWAY } L_A \text{ AND } L_D \text{ SINCE THESE 2 TOUCH } P_2 = ag$$

$$\Rightarrow \Delta_2 = 1 - (L_B + L_C) + L_B L_C \quad \Delta_3 = \Delta$$