1. In the Sallen-Key filter shown, \( R_1 = 25 \) kohms and \( C_2 = 50 \) pF. Choose \( R_2 \) to maximize the pole \( Q \), and \( C_1 \) to achieve \( Q_{\max} = 4 \).

![Sallen-Key Filter Diagram]

2. For the \( G_m-C \) filter shown, find
   a. the condition for zeros located on the imaginary axis in the s plane;
   b. the pole frequency and pole \( Q \).

![Gm-C Filter Diagram]

3. Find all transfer functions \( V_{\text{out}}/I_k, k = 1, 2, 3, 4 \) for the circuit shown. All impedances are equal to \( Z \).
   (Hint: use interreciprocity, and analyze the adjoint network from the left!)

![Transfer Function Diagram]