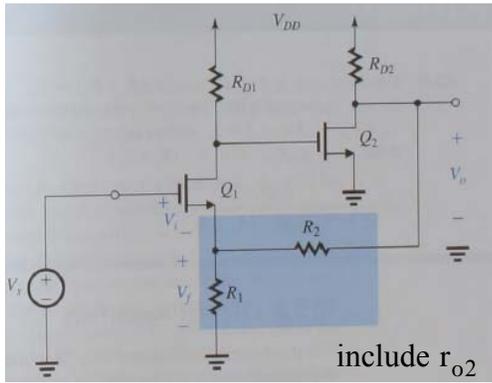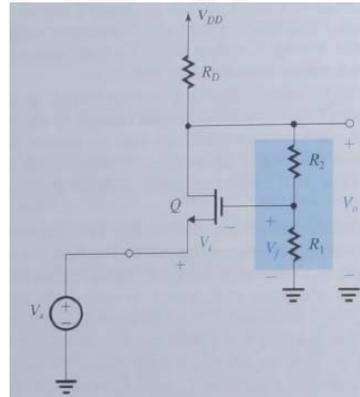For the following circuits, find the loop gain, L, asymptotic gain, A_∞, and feedthrough term, d. For any transistors, Q_i, assume a transconductance of g_{mi}. Ignore r_{oi} unless the figure states "include r_{oi}.

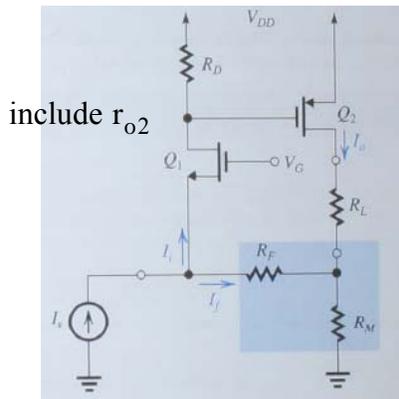$$A_{cl} = \frac{V_o}{V_s}$$

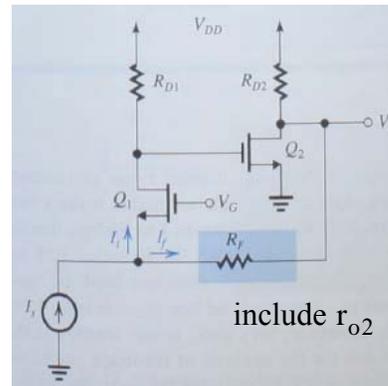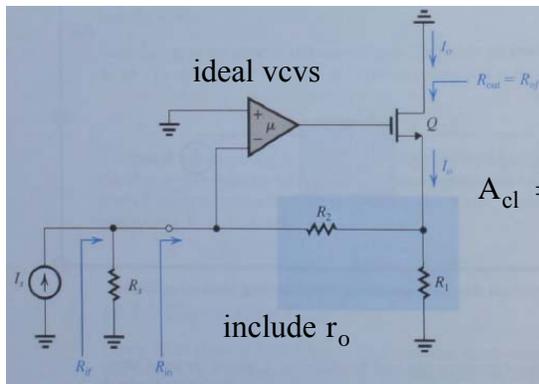include r_{o2}

(a)

$$A_{cl} = \frac{V_o}{V_s}$$

(b)

include r_{o2}

$$A_{cl} = \frac{I_o}{I_s}$$

(c)

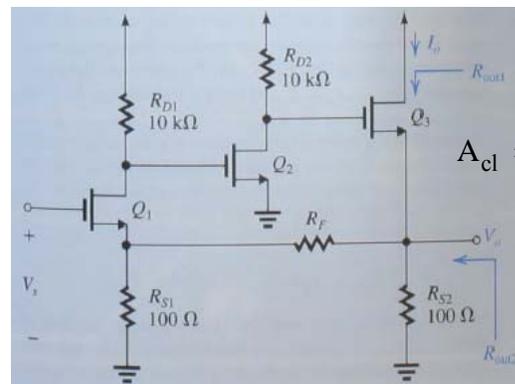
$$A_{cl} = \frac{V_o}{I_s}$$

include r_{o2}

(d)

ideal vcvs

$$A_{cl} = \frac{I_o}{I_s}$$

include r_o

(e)

$$A_{cl} = \frac{V_o}{V_s}$$

(f)   include r_{o2}, r_{o3}
ignore resistor values given