For the following circuits, find the loop gain, L, asymptotic gain, $A_{\infty}$, and feedthrough term, $d$. For any transistors, $Q$, assume a transconductance of $g_{mi}$. Ignore $r_{oi}$ unless the figure states “include $r_{oi}$.”

(a) $A_{cl} = \frac{V_o}{V_s}$

(b) $A_{cl} = \frac{V_o}{V_s}$

(c) $A_{cl} = \frac{I_o}{I_s}$

(d) $A_{cl} = \frac{V_o}{I_s}$

(e) $A_{cl} = \frac{I_o}{I_s}$

(f) $A_{cl} = \frac{V_o}{V_s}$

- (e) include $r_o$
- (f) include $r_{o2}, r_{o3}$
- Ignore resistor values given