$$v_o = -g_m v_\pi (R_C \| R_L) = -\beta i_b (R_C \| R_L)$$

$$v_s = v_\pi + (\beta+1) i_b R_E$$

$$= i_b (r_\pi + (\beta+1)) R_E$$

$$A_{v_s} = \frac{v_o}{v_s} = \frac{-\beta (R_C \| R_L)}{r_\pi + (\beta+1) R_E} \simeq \frac{-R_C \| R_L}{R_E}$$

$$A_{is} = \frac{i_o}{i_s} = \frac{v_o / R_L}{v_s / R_{in(ckt)}}$$

$$= \frac{v_o (R_B \| (r_\pi + (\beta+1) R_E))}{v_s \; R_L}$$

$$= A_{v_s} \frac{(R_B \| (r_\pi + (\beta+1) R_E))}{R_L}$$

$$= -\beta \frac{R_C}{R_C + R_L} \cdot \frac{R_B}{R_B + r_\pi + (\beta+1) R_E}$$