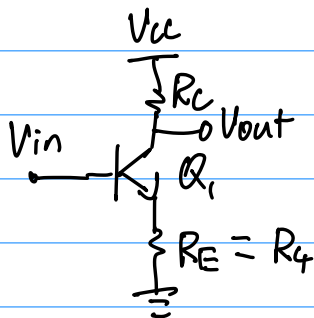
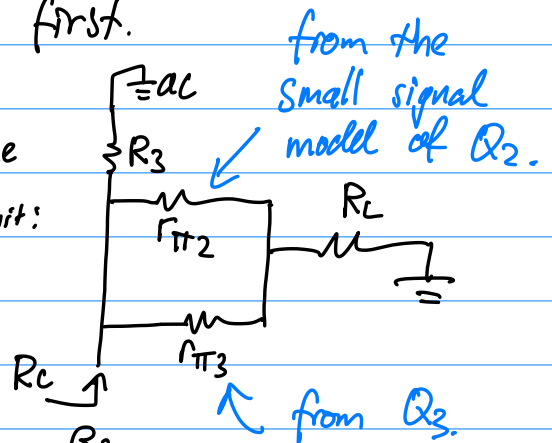


(a) Class AB

(b) Consider the CE driver first.



R_c is the equiv circuit:



where $r_{\pi 2} \approx \frac{\beta_2}{g_{m2}}$, $r_{\pi 3} \approx \frac{\beta_3}{g_{m3}}$

If we assume large β then $r_{\pi 2} \gg R_3$ and $r_{\pi 3} \gg R_3$, so $R_c \approx R_3$.

\therefore The gain of this first stage is $A_{v1} \approx \frac{-R_3}{\frac{1}{g_{m1}} + R_4}$.

With high bias current (large g_m), $A_{v1} \approx \frac{-R_3}{R_4}$

The following stage is a follower with gain ≈ 1 so $\frac{-R_3}{R_4}$ is a rough intuitive expression for the gain.