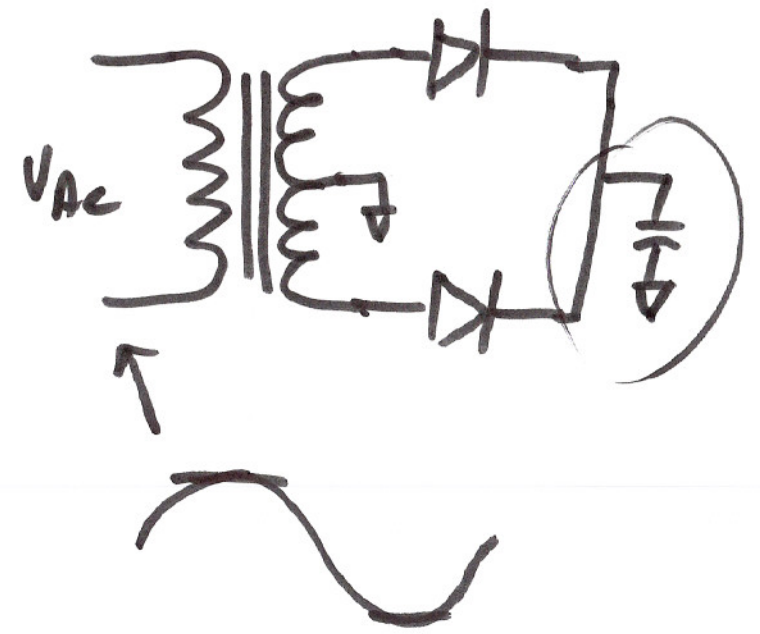
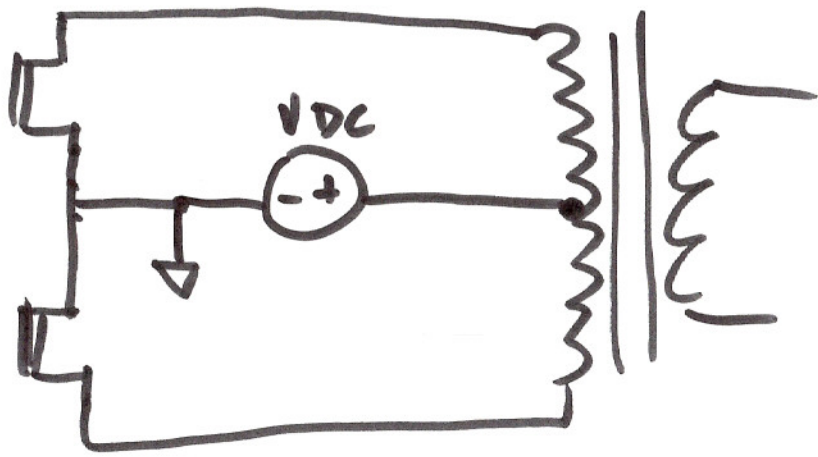
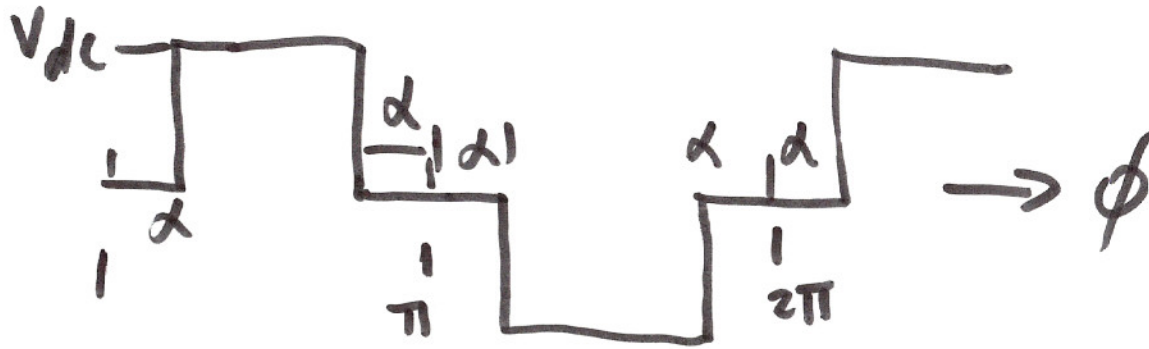


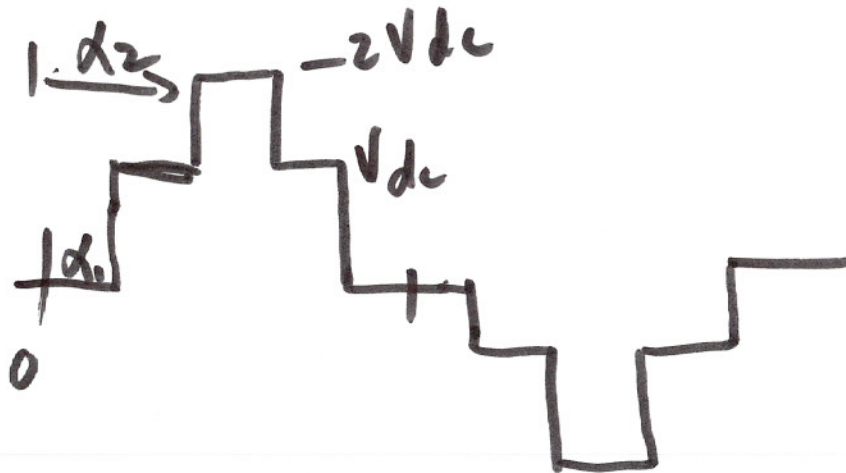
$$V_p = \frac{V_{DC}}{2}$$

Equal duty cycle req'd





$$V_n = \frac{2}{\pi} \int_{\alpha}^{\pi-\alpha} V_{dc} \sin n\phi \, d\phi = \frac{4V_{dc}}{n\pi} \cos n\alpha$$



$$V_n = \frac{4V_{dc}}{n\pi} (\cos n\alpha_1 + \cos n\alpha_2)$$

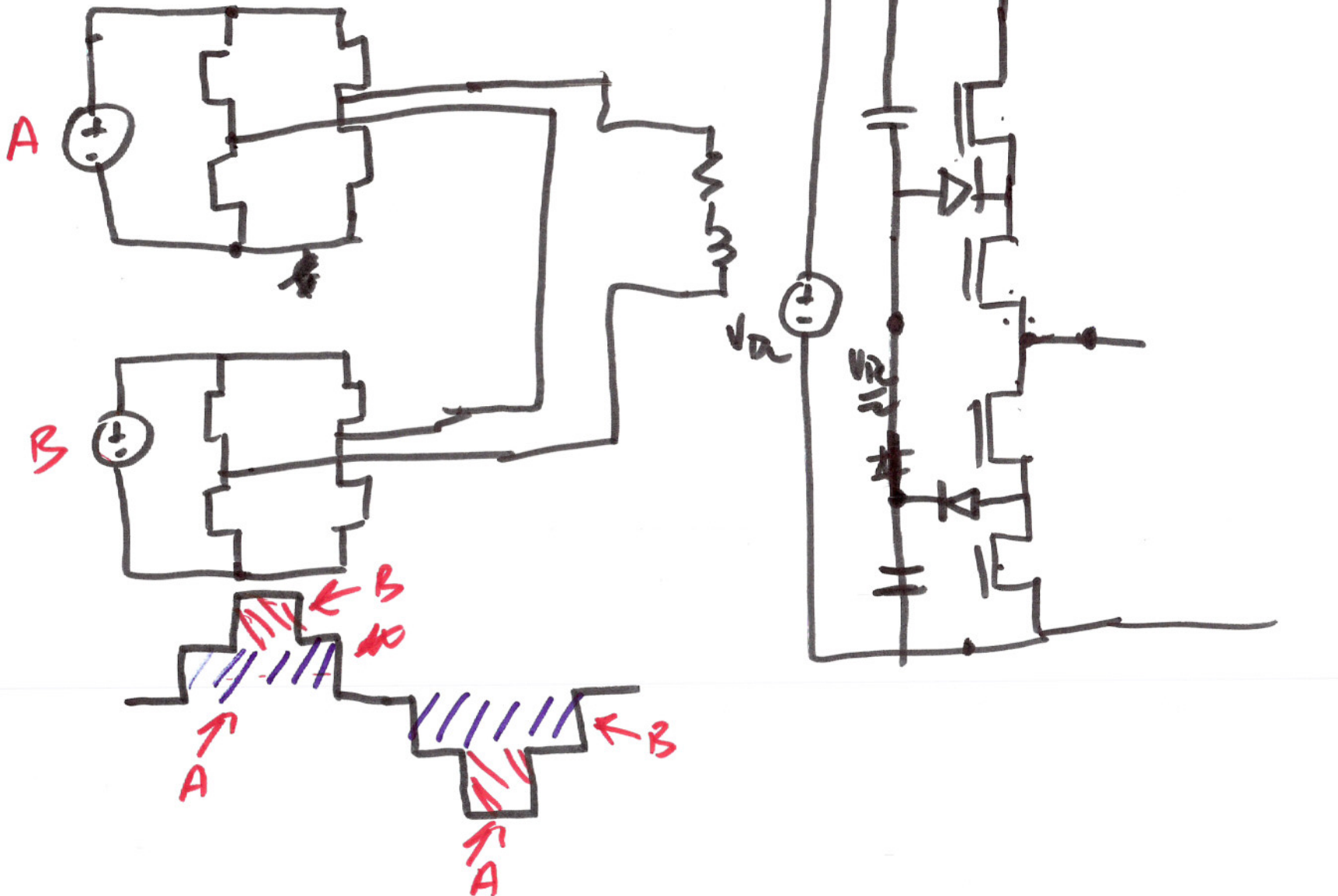
Mod index $m_i = \frac{V_i}{2(4V_{dc}/\pi)} = \frac{\cos \alpha_1 + \cos \alpha_2}{2}$

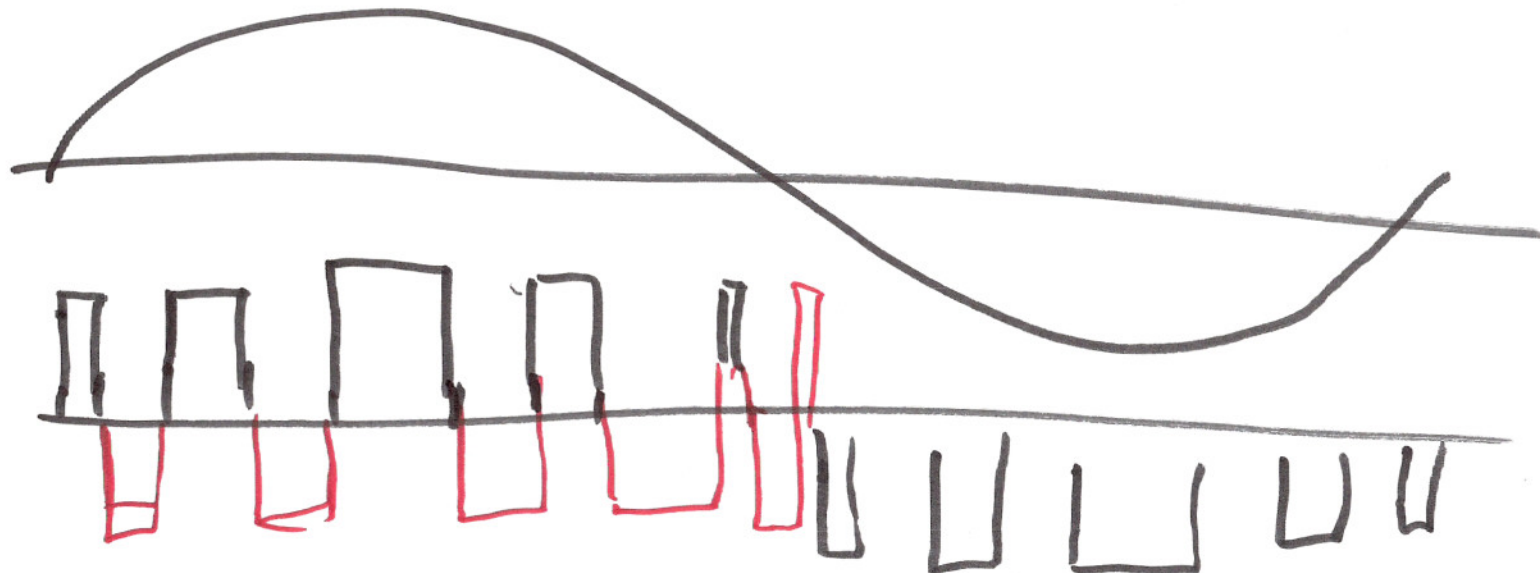
$\cos m\alpha_1 + \cos m\alpha_2 = 0$
 $\cos \alpha_1 + \cos \alpha_2 = 2 m_i$

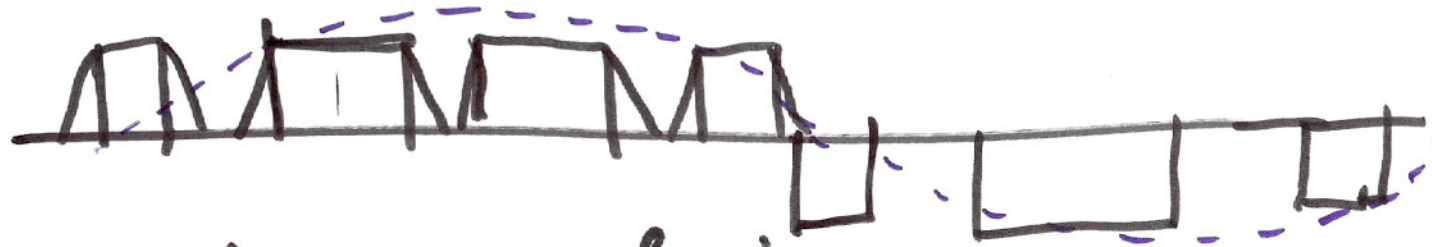
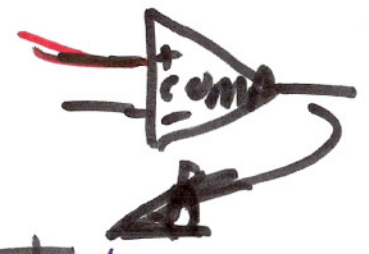
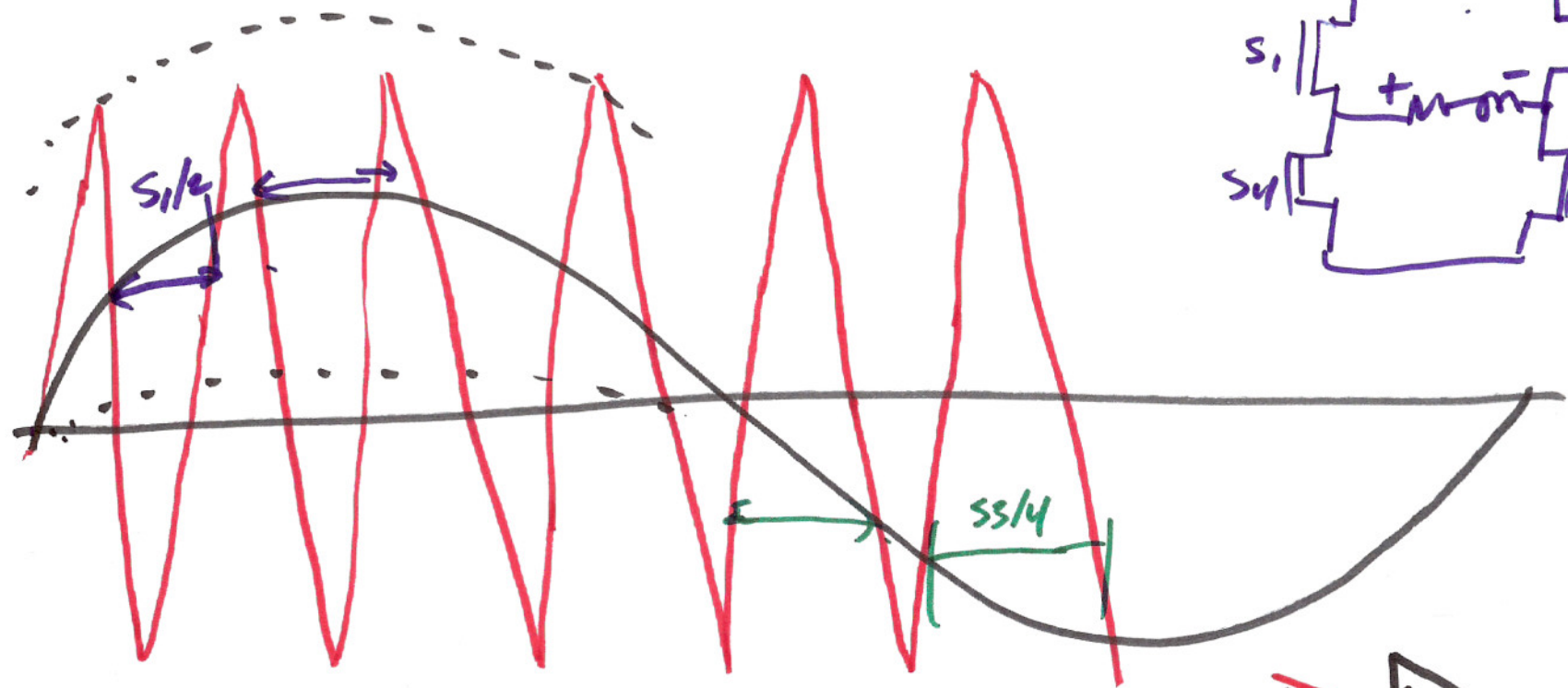
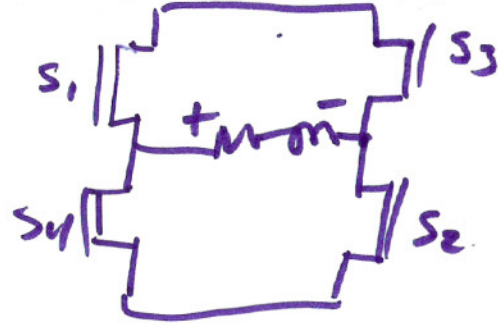
for k bridges $2k + 1$ levels

$$V_n = \frac{4V_{dc}}{n\pi} \left[\cos n\alpha_1 + \cos n\alpha_2 + \dots + \cos n\alpha_k \right]$$

Pattern Swapping

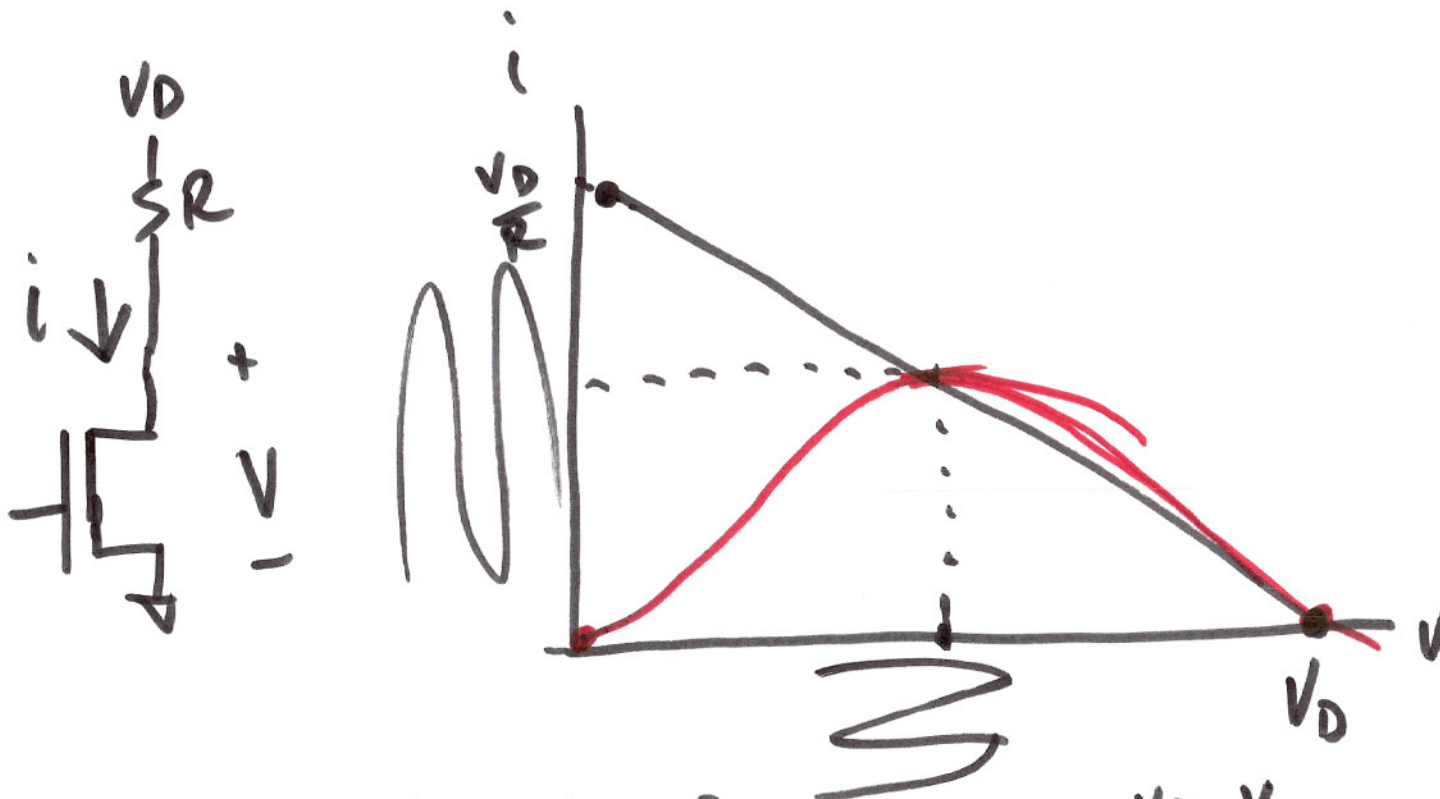






FM ratio $M_f = \frac{f_{tri}}{f_{sin}}$

Am ratio $M_a = \frac{V_{sin(pk)}}{V_{tri(pk)}}$



$$P = v \times i \quad i = \frac{v_D - v}{R}$$

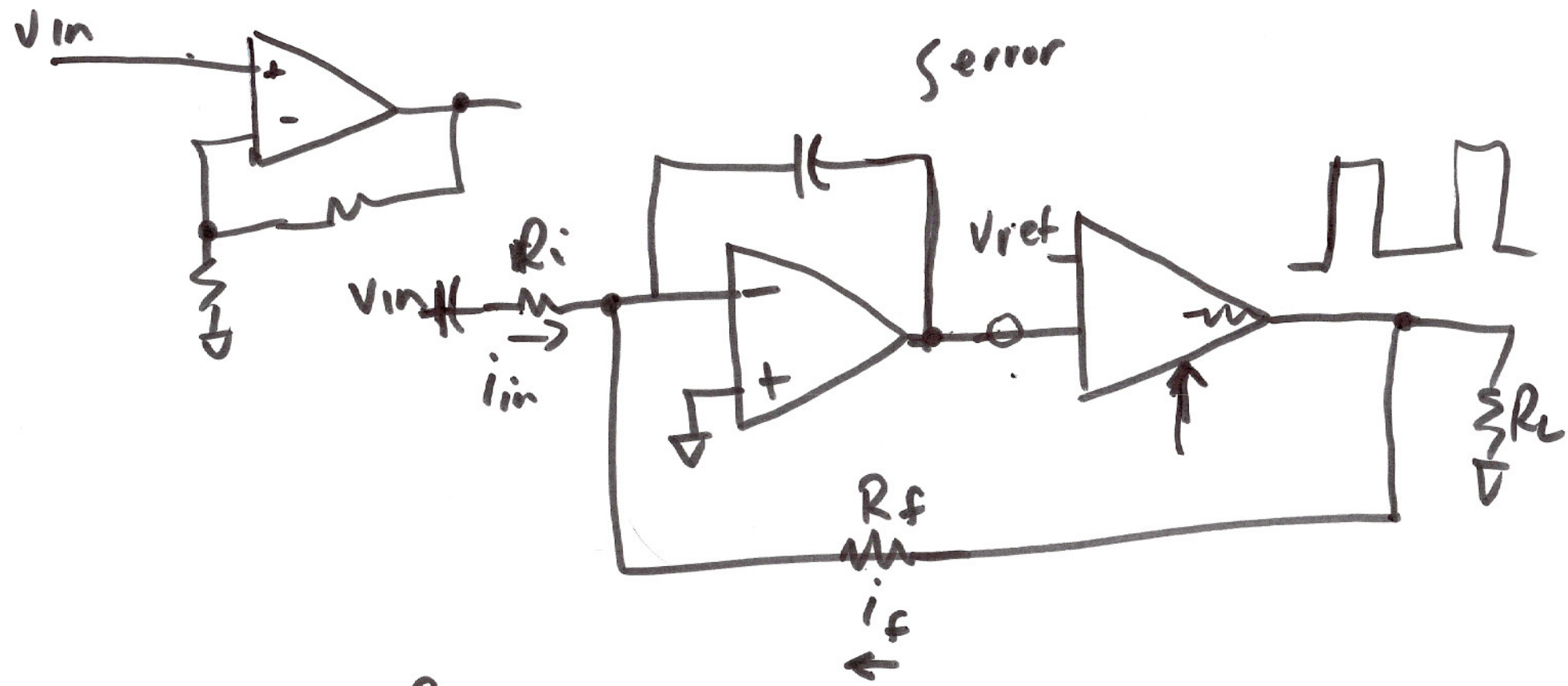
$$P = v \times \frac{v_D - v}{R}$$

$$P = \frac{v \cdot v_D - v^2}{R}$$

$$\frac{dP}{dv} = \frac{1}{R} (v_D - 2v)$$

$$2v = v_D$$

$$v = v_D / 2$$



$$\frac{R_f}{R_i} = 10$$