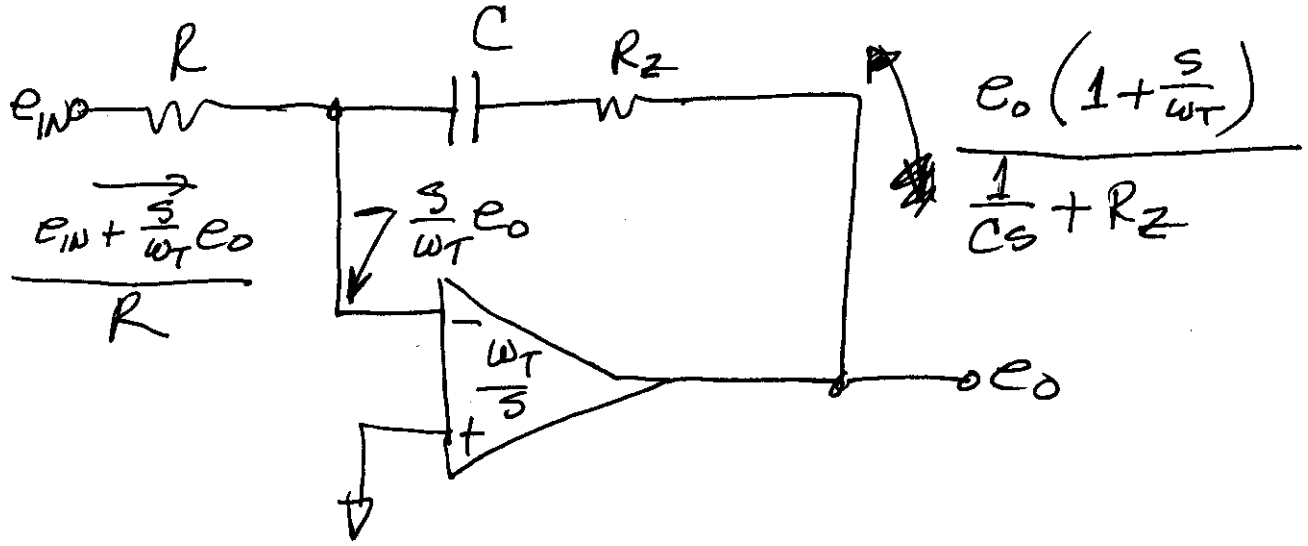
SIMPLISTICALLY



$$\frac{e_{IN}+\frac{s}{\omega_T}e_o}{R} = \frac{e_o\left(1+\frac{s}{\omega_T}\right)}{\frac{1}{Cs}+R_2} = \frac{Cs\,e_o\left(1+\frac{s}{\omega_T}\right)}{R_2Cs+1}$$

$$\frac{e_{IN}+\frac{s}{\omega_T}e_o}{R} = \frac{Cs\,e_o\left(1+\frac{s}{\omega_T}\right)}{R_2Cs+1}$$

$$e_{IN}+\frac{s}{\omega_T}e_o = \frac{RCs\,e_o\left(1+\frac{s}{\omega_T}\right)}{R_2Cs+1}$$

SET $R_2C = \frac{1}{\omega_T}$

$$e_{IN}+\frac{s}{\omega_T}e_o = RCs\,e_o$$

$$e_{IN} = e_o\left(RCs-\frac{s}{\omega_T}\right) = s\,e_o\left(RC-\frac{1}{\omega_T}\right)$$

$$e_o = \frac{1}{s}\,e_{IN}\,\frac{1}{RC-\frac{1}{\omega_T}} \equiv$$ PERFECT INTEGRATOR WITH GAIN ERROR: $\omega_T/(\omega_T RC-1)$