

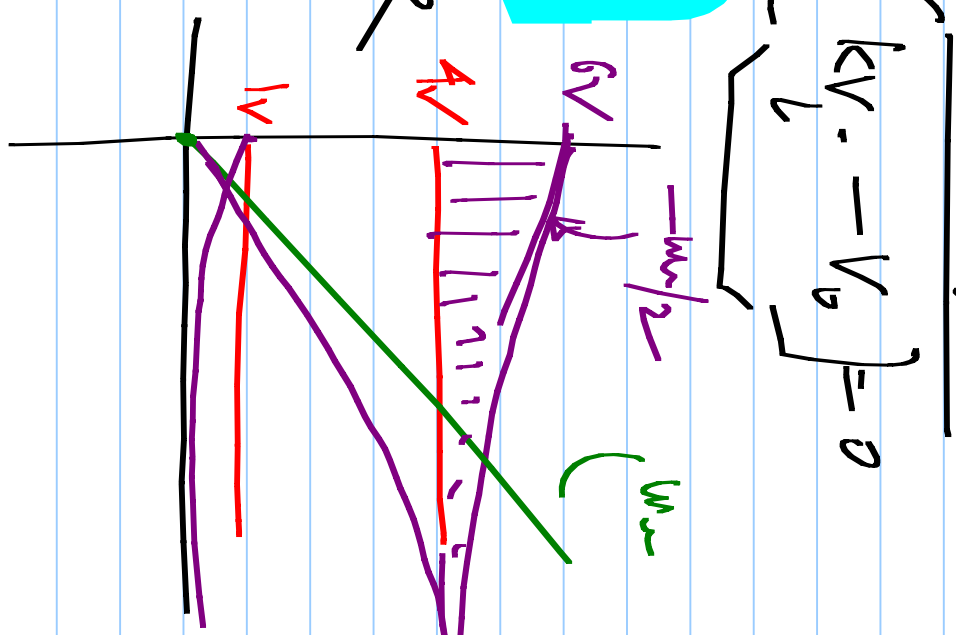
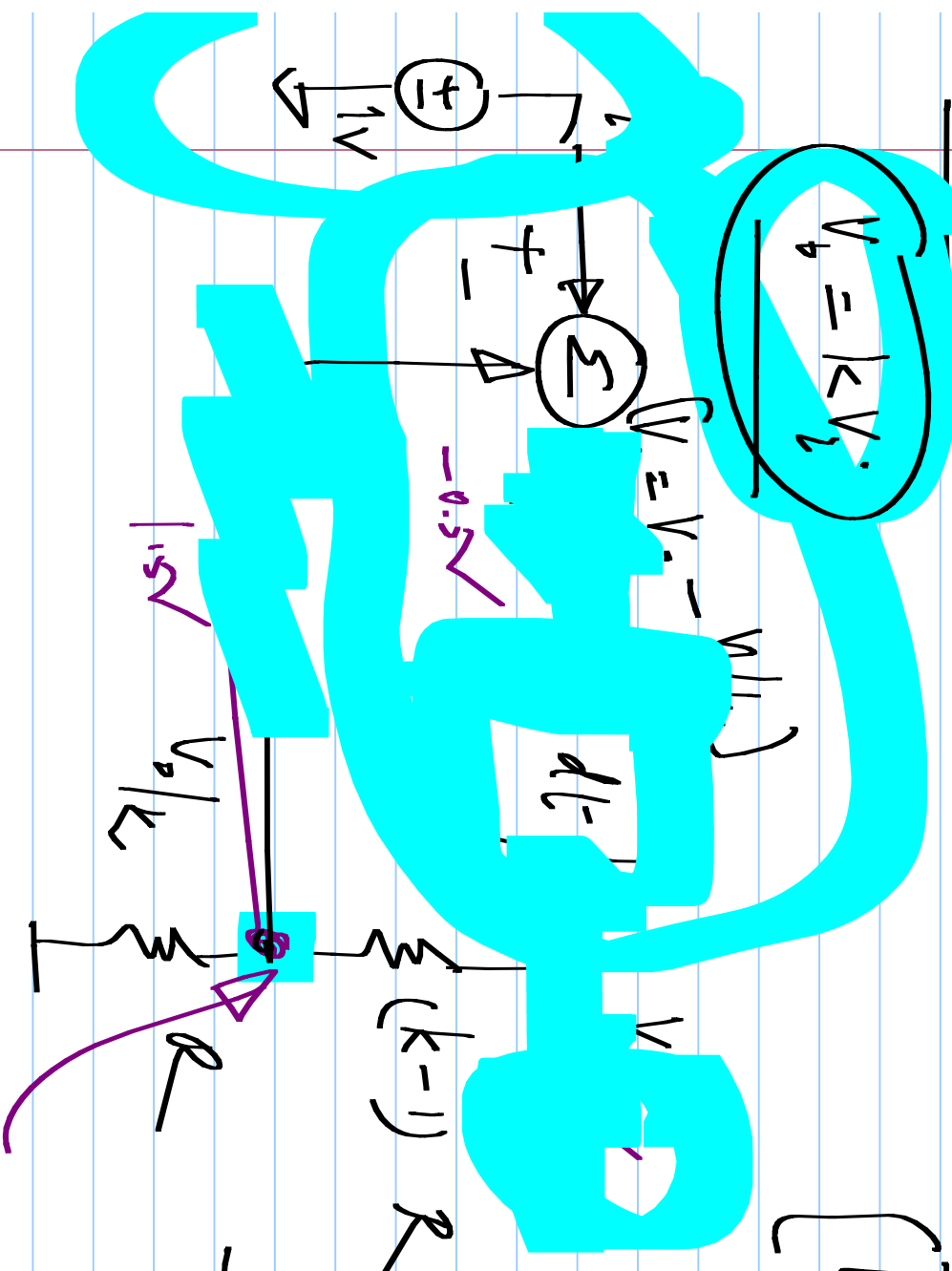
EE 2019

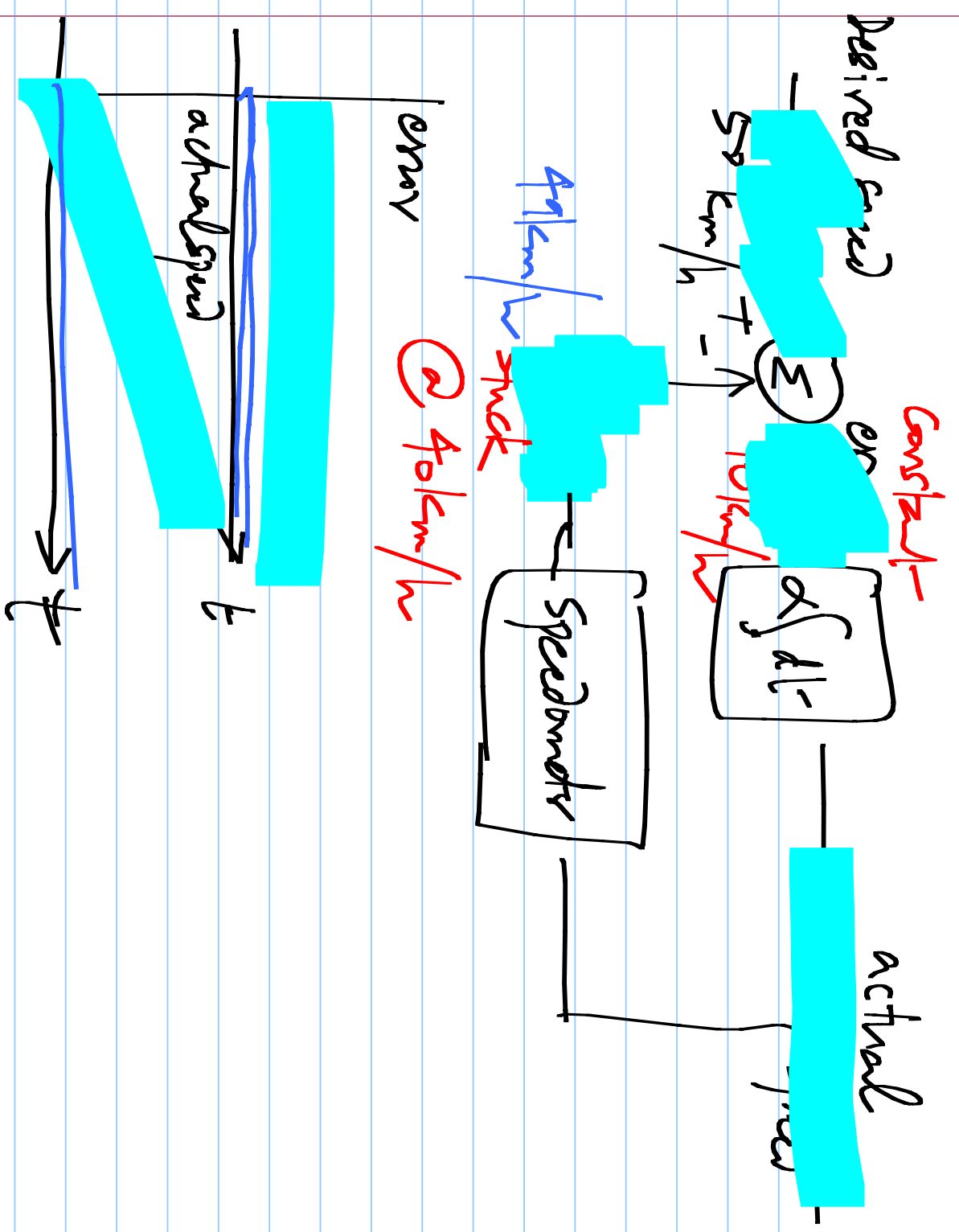
$$k=4$$

$$k > 1$$

$$\text{Error} = [V_0 - kV_L] = 0$$

$$V_0 = kV_L$$





Desired speed  
 50 km/h  
 or  
 10 km/h  
 Constant

40 km/h  
 stuck

@ 40 km/h

error

actual speed

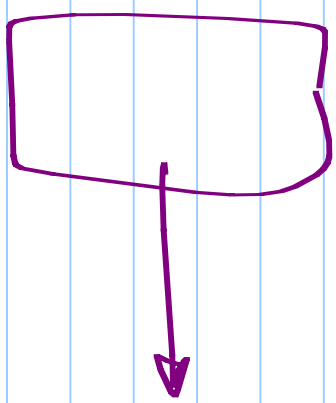
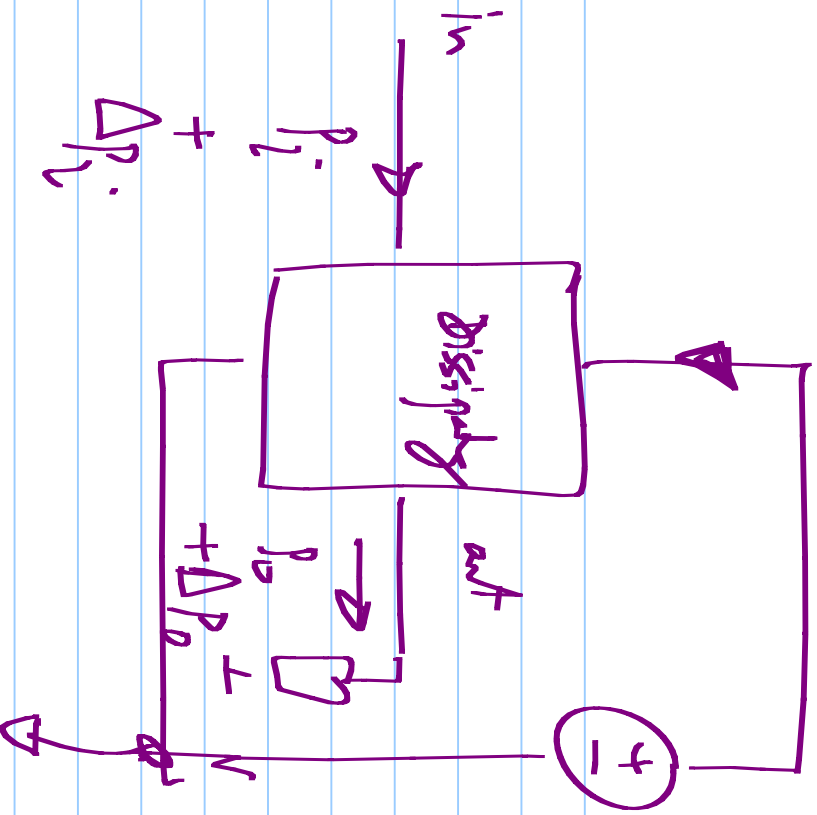
$t$

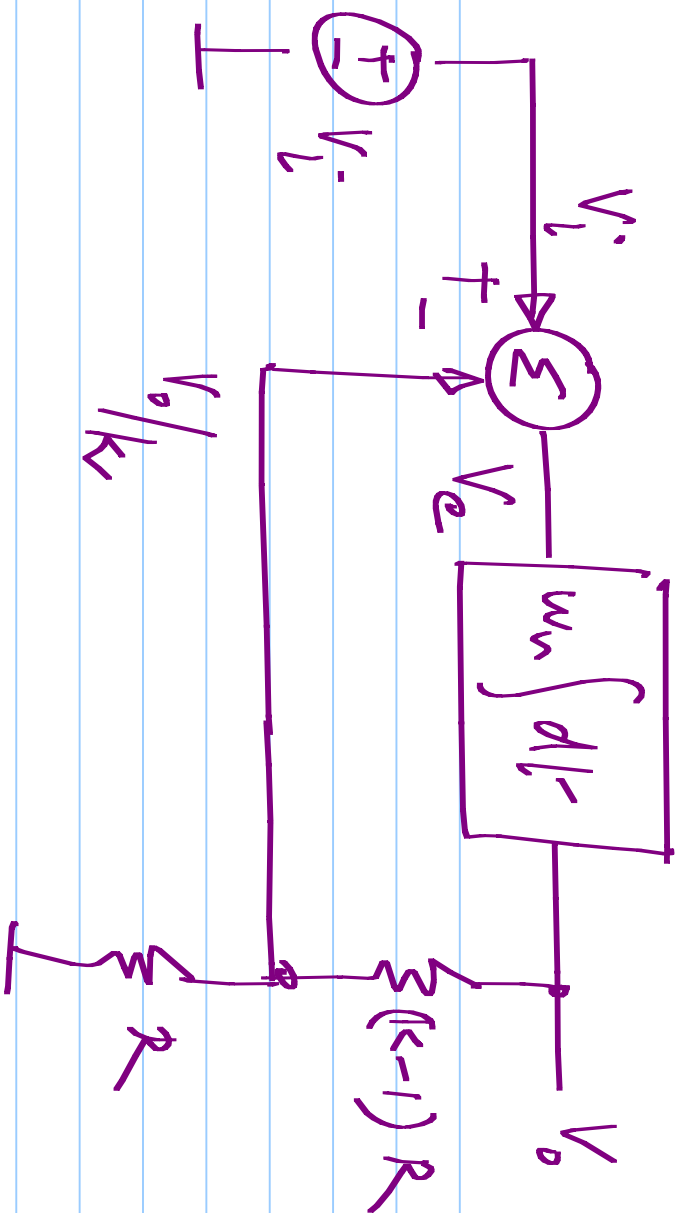
## Negative feedback system

(sense)

\* Compute the error (desired - actual)

\* Integrate the error to drive the o/p.





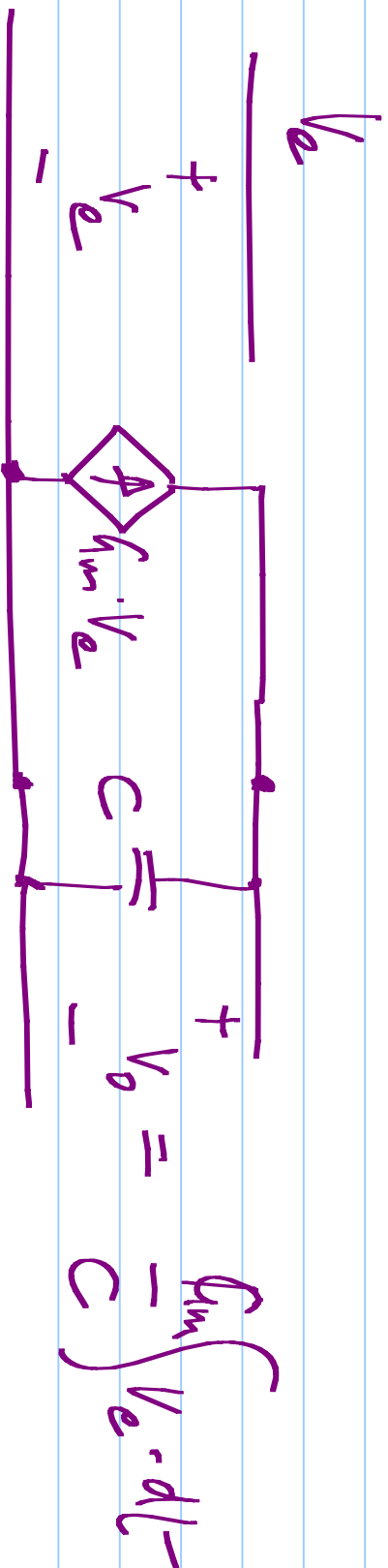
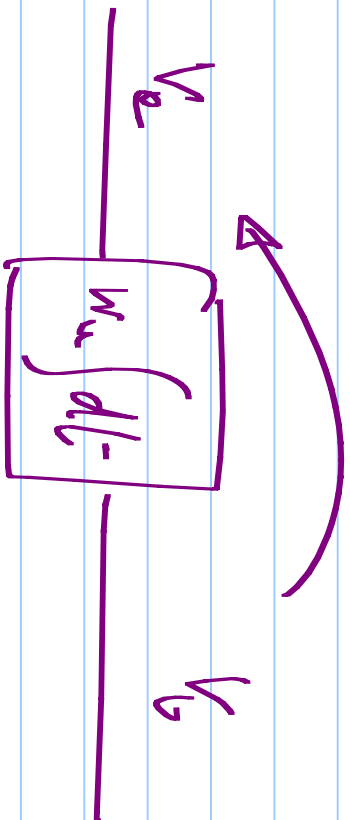
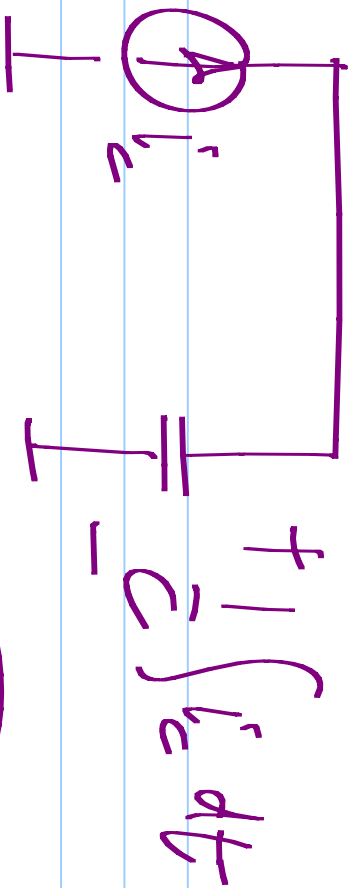
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$$i_c = C \cdot \frac{dV_c}{dt}$$

$$V_c = \frac{1}{C} \int i_c \cdot dt$$


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$$i_L = \frac{1}{L} \int V_L \cdot dt$$



$$V_o = \frac{I_m}{C} \int V_e dt$$

