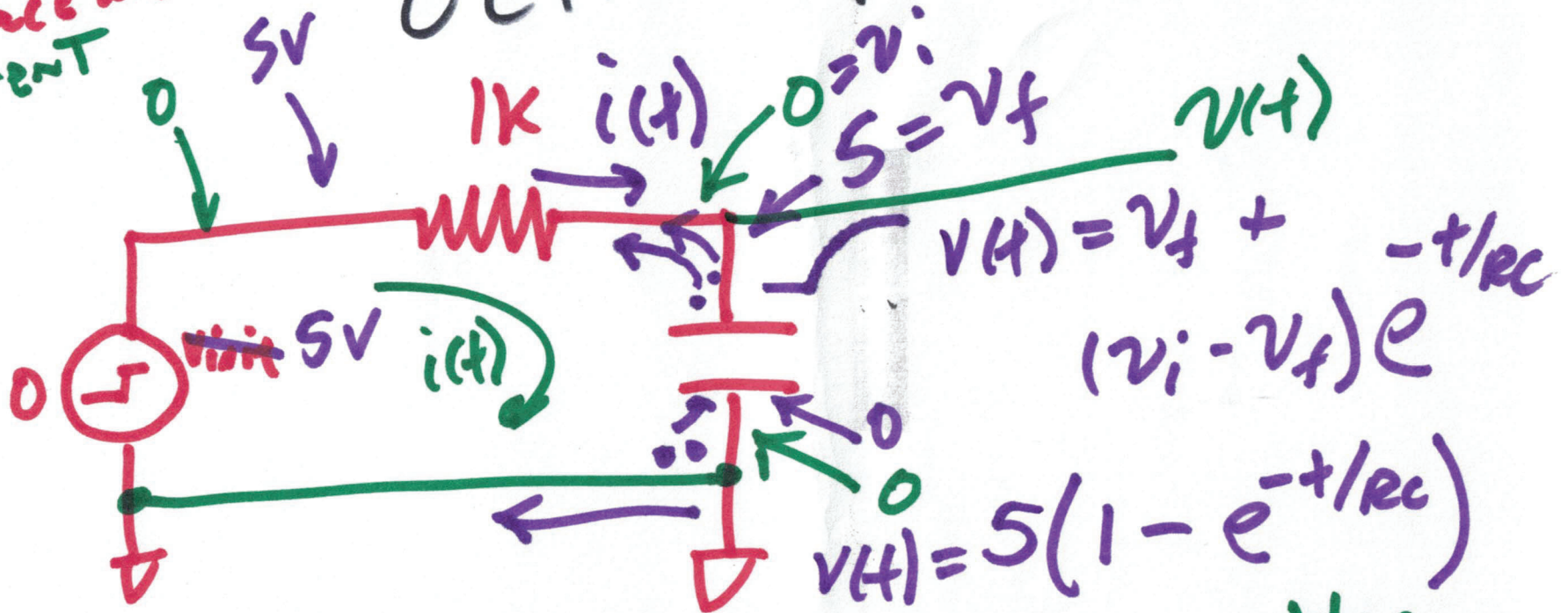


EE 220 circuits 1

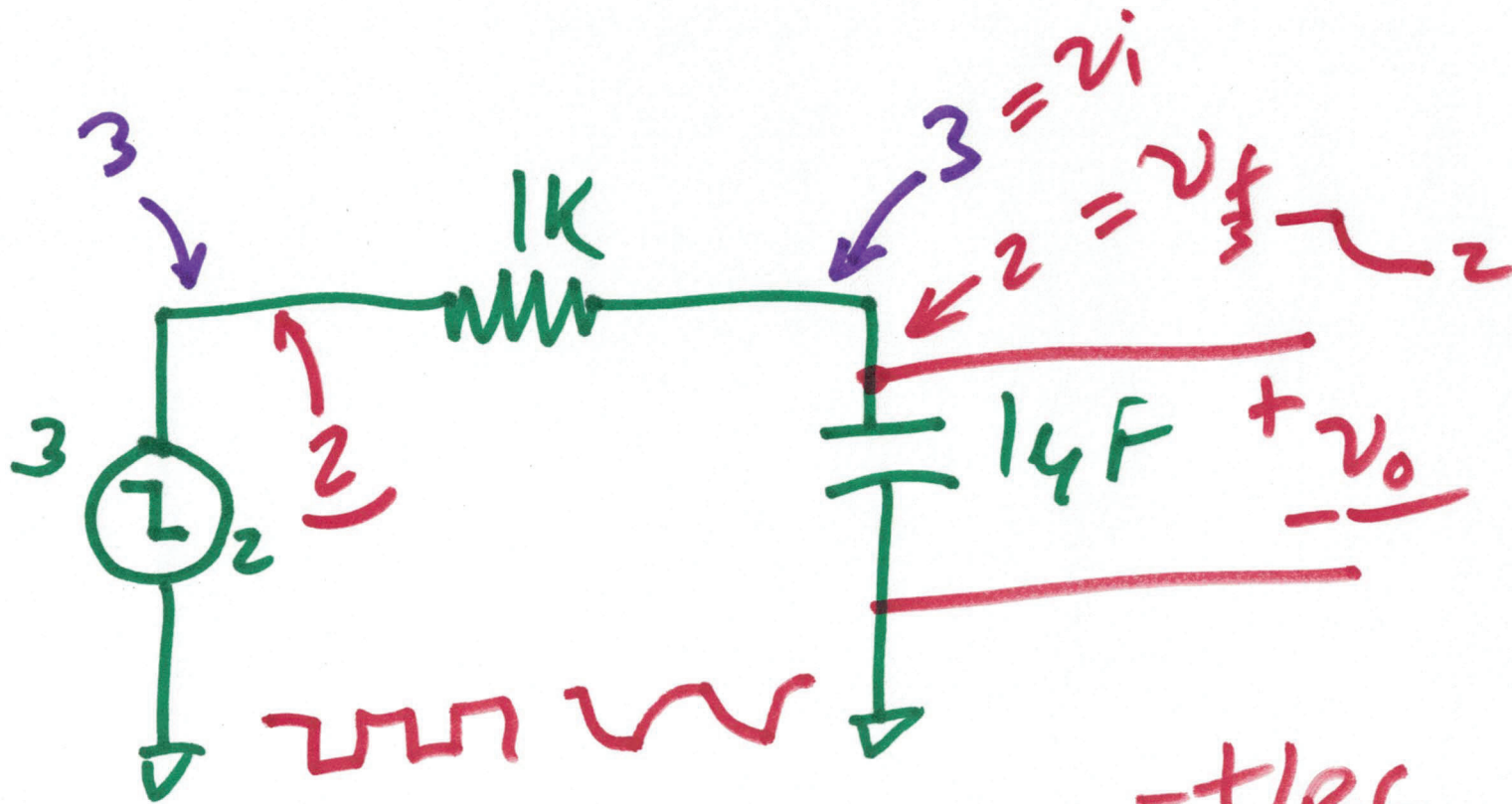
Lecture 16

Oct. 20, 2021

WIRE
HH
wire displacement
CURRENT



$$i(t) = \frac{5 - v(t)}{1k} = 5mA e^{-t/RC}$$

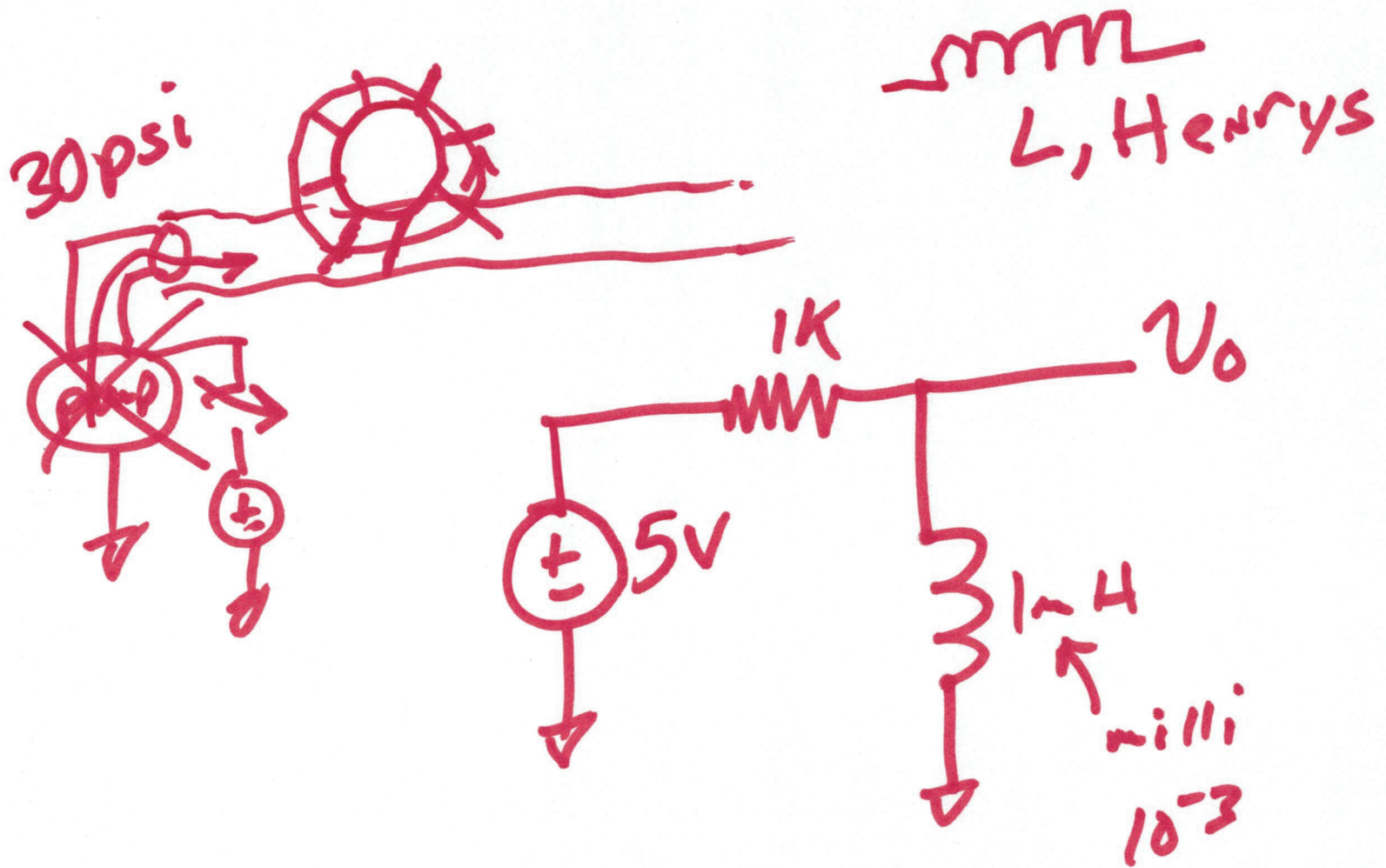


$$v_o(t) = 2 + (3 - 2)e^{-t/RC}$$

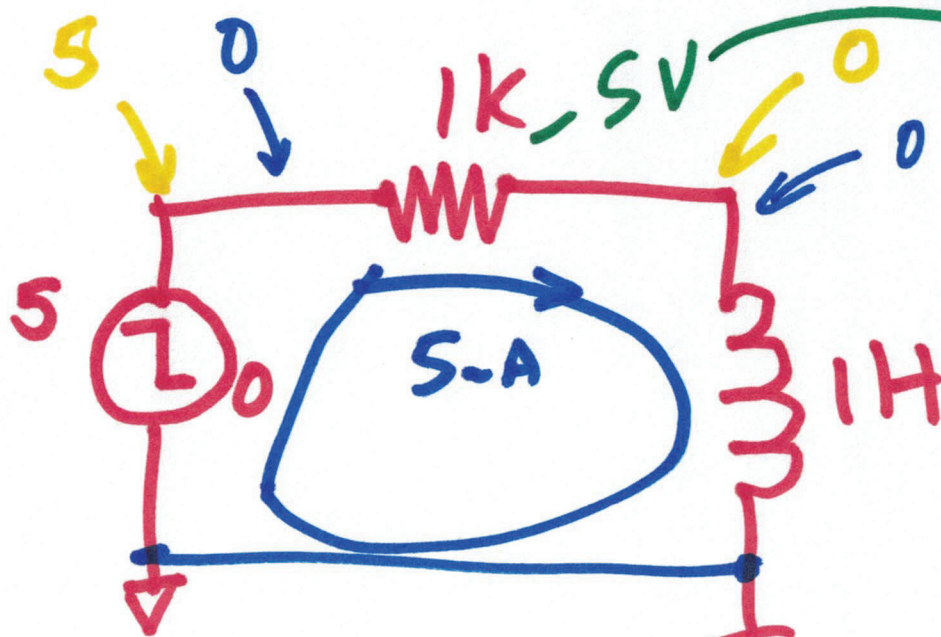
$$= 2 + e^{-t/RC}$$

$$i = \frac{2 - v_o}{1k} = \frac{2 - 2e^{-t/RC}}{1k}$$

2)



3)



$$v_i = -5V$$

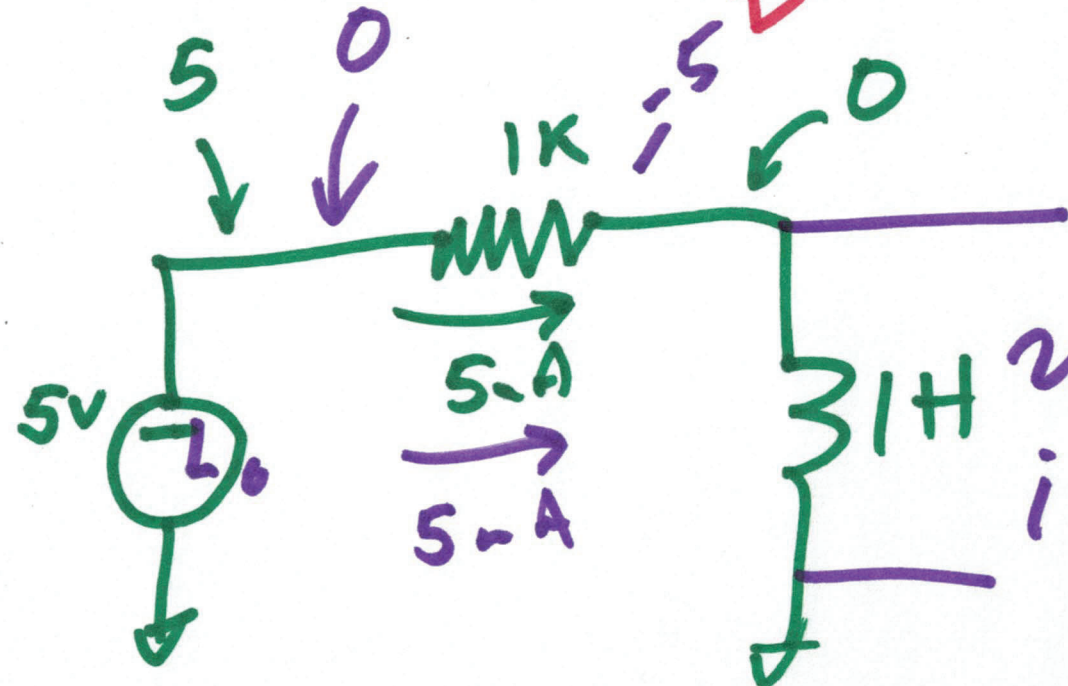
$$v_f = 0$$

$$i_i = 5A$$

$$i_f = 0$$

$$\tau = RC$$

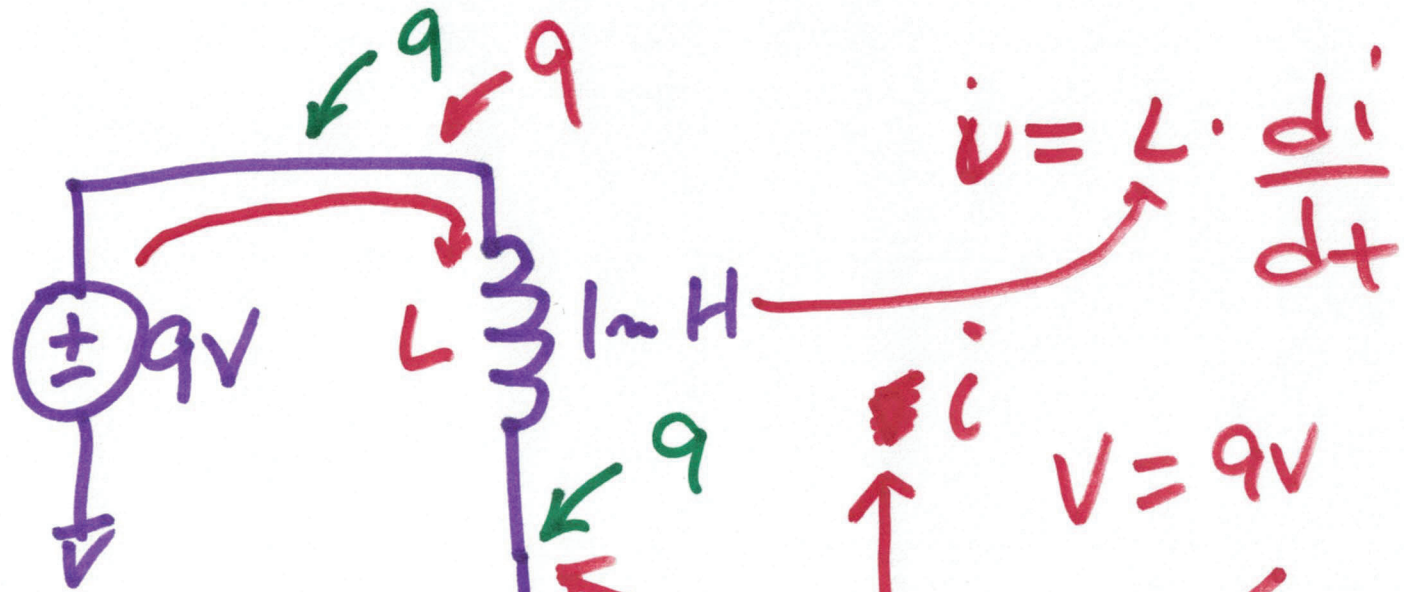
$$\tau = L/R$$



$$v_o = 0 + (-5 - 0)e^{-t/4R}$$

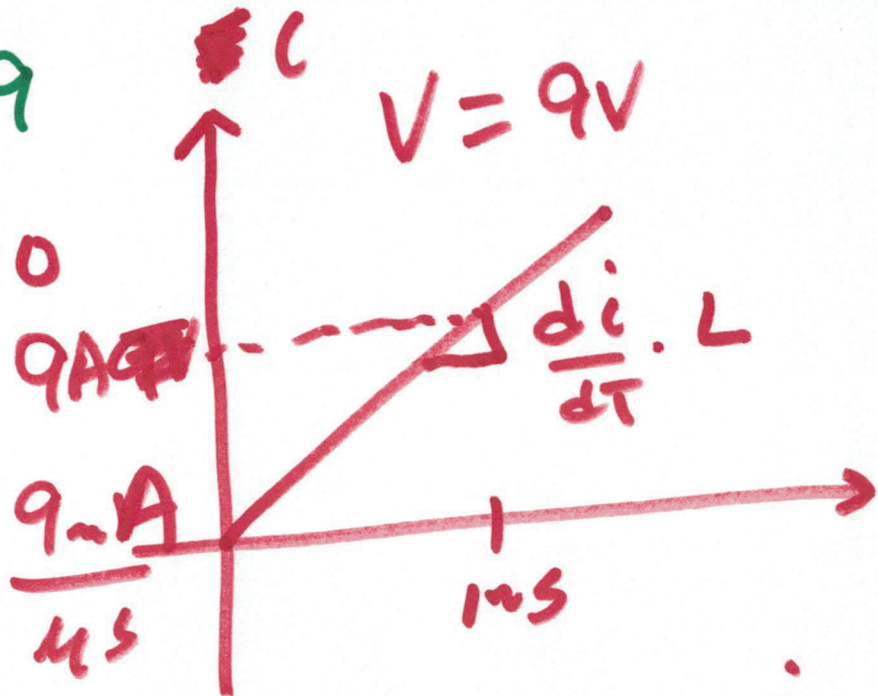
$$i = 0 + (5A - 0)e^{-t/4R}$$

4)



$$\frac{di}{dt} = \frac{9V}{1mH} = \frac{9A}{ms} = \frac{9mA}{\mu s}$$

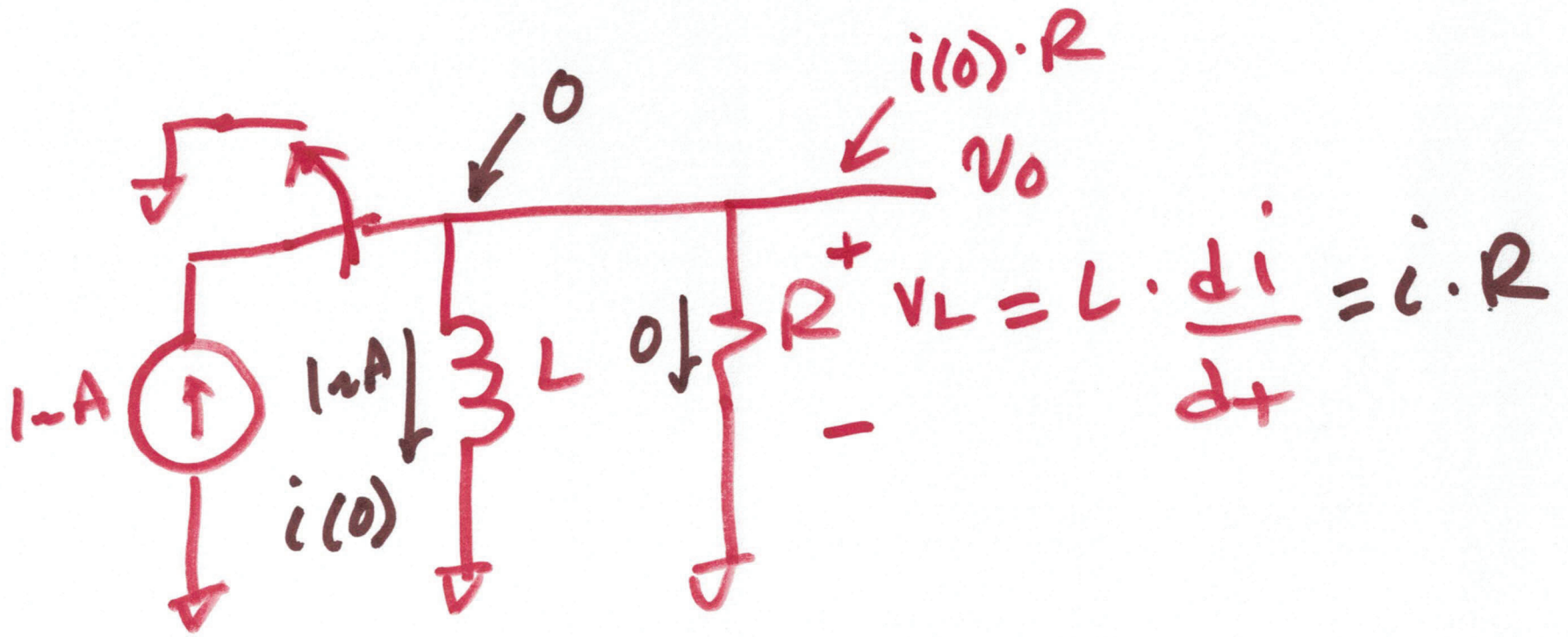
$$\frac{V}{H} = \frac{A}{S}$$



$$i_a + I_A = i_A$$

AC DC AC+DC

5)



b)