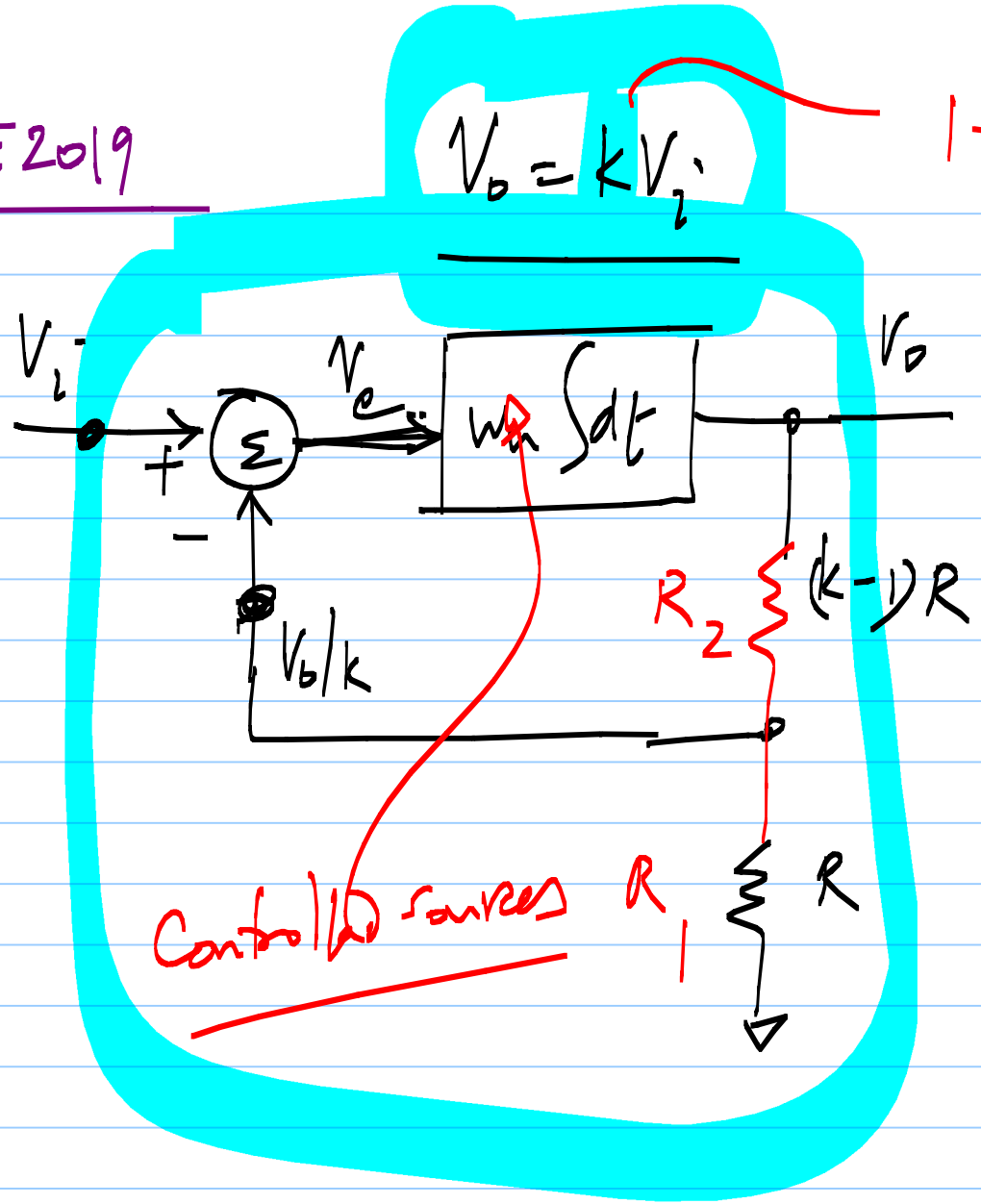
EE 2019

19/1/2017

$V_o = kV_i$

$1 + \frac{R_2}{R_1}$



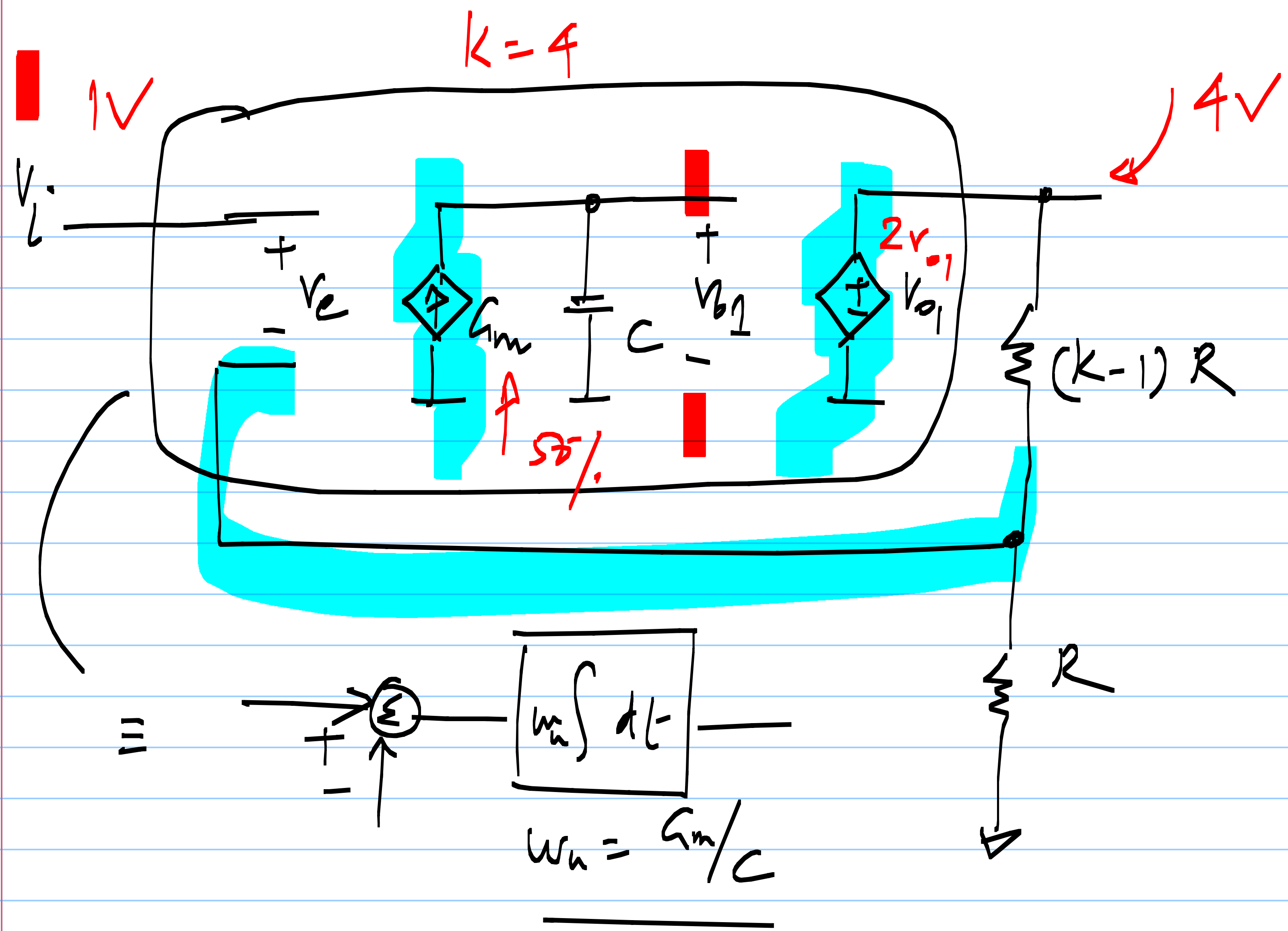
For constant inputs (dc)

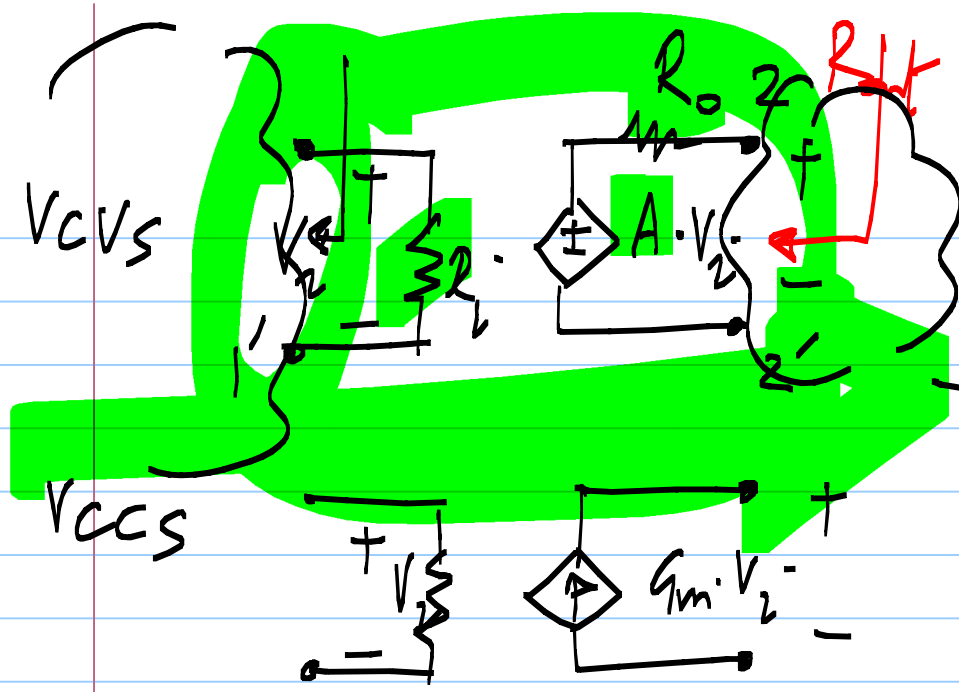
steady state

$V_o = kV_i$

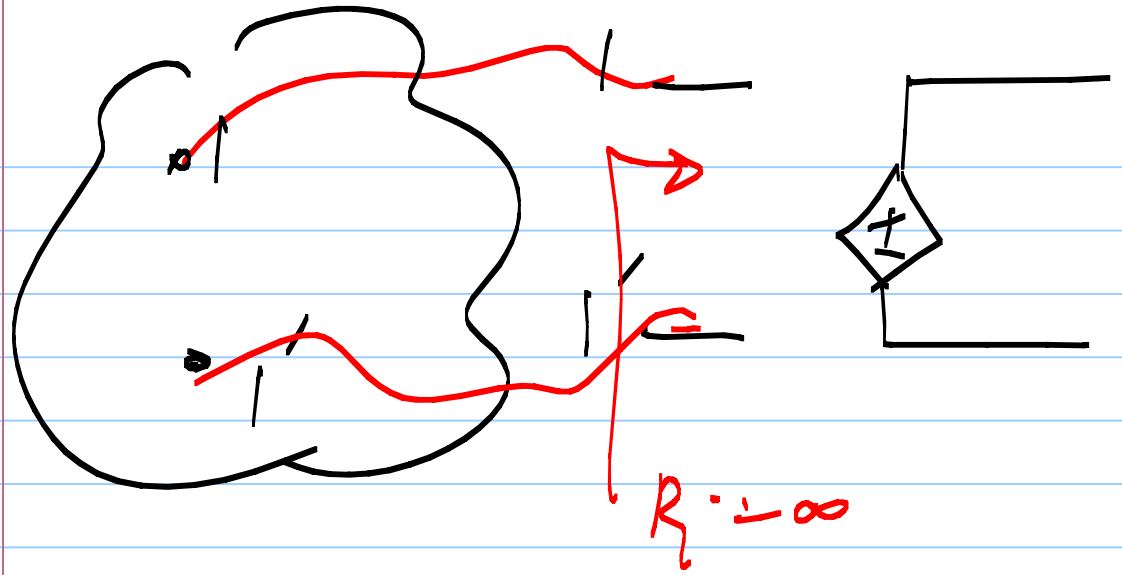
Error $V_e = 0$

$V_o = (\quad) V_i$


1V
k = 4
4V
v_i
v_e
G_m
C
v_{o1}
$2v_{o1}$
v_{o1}
55%
(K-1) R
R
=
$w_n \int dt$
$w_n = G_m/C$



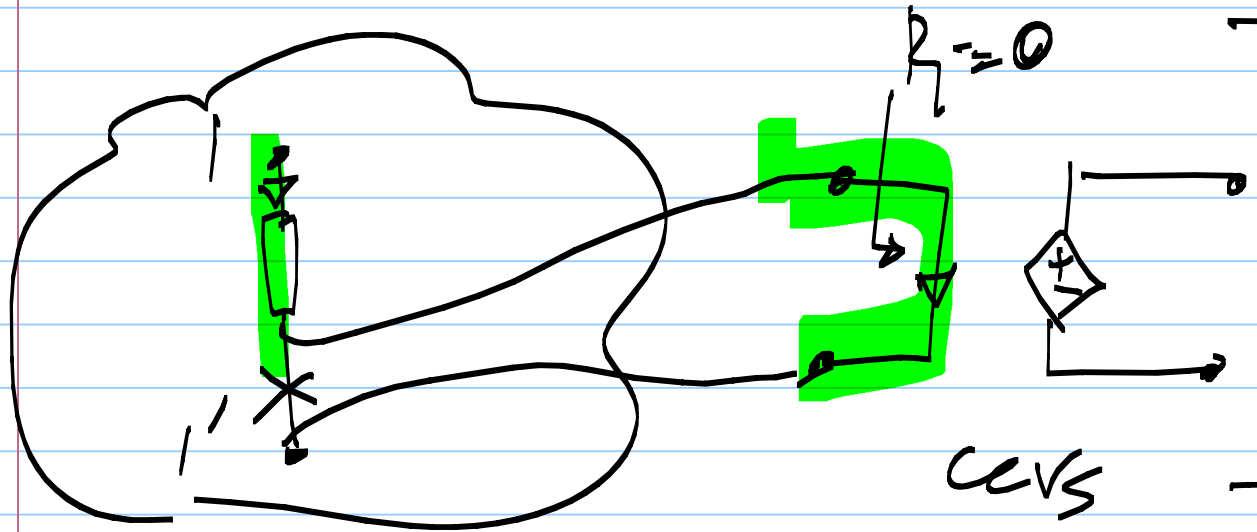
VCVS	$R_i = \infty$ $R_{out} = 0$	R_L: large R_{out}: small
VCCS	$R_i = \infty$ $R_{out} = \infty$	R_L: large R_{out}: large
CCVS	$R_i = 0$ $R_{out} = 0$	R_L: small R_{out}: small
CCCS	$R_i = 0$ $R_{out} = \infty$	R_L: small R_{out}: large



Voltage controlled Source

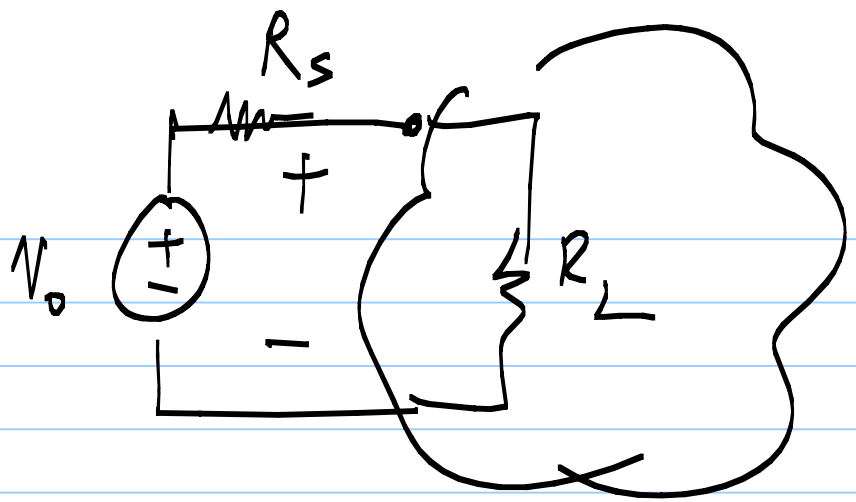
$R_s = \infty$

Doesn't load the circuit



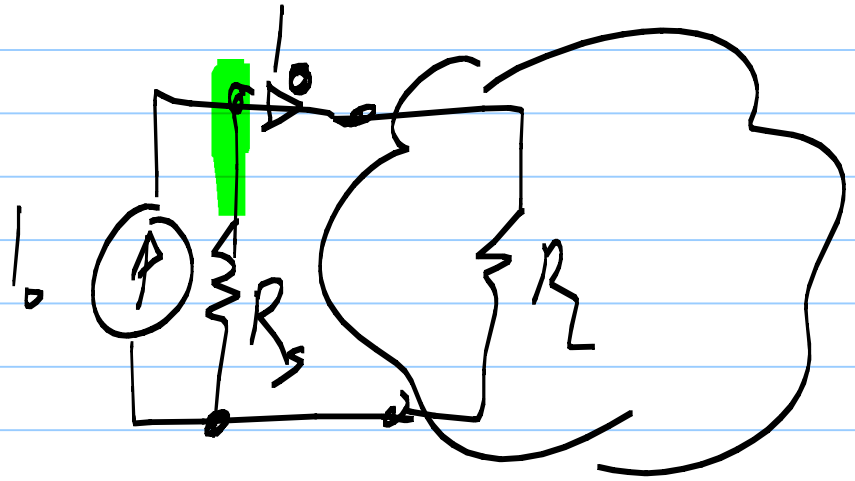
Current controlled Source

$R_s = 0$



$$R_s \ll R_L$$

$$\frac{R_L}{R_s + R_L} \cdot V_o \simeq V_o$$



$$R_s \gg R_L$$

$$\frac{R_s}{R_s + R_L} \cdot I_o \simeq I_o$$