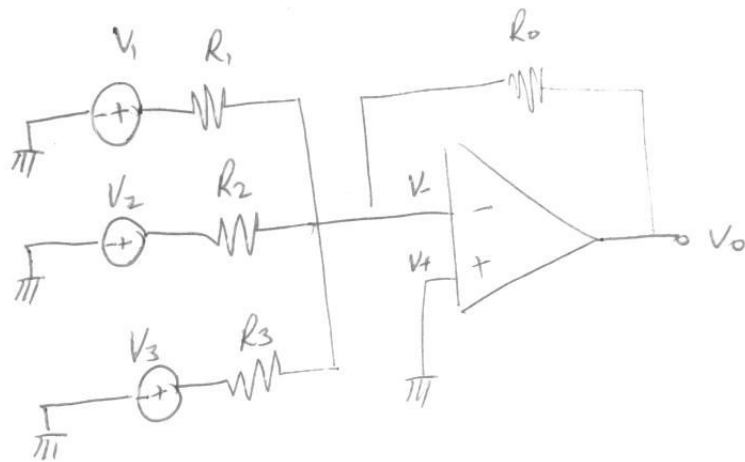


Lecture 9:

slide 20:

NFB: ✓

SPC: $V_+ = V_-$
 $i_+ = i_- = 0A$



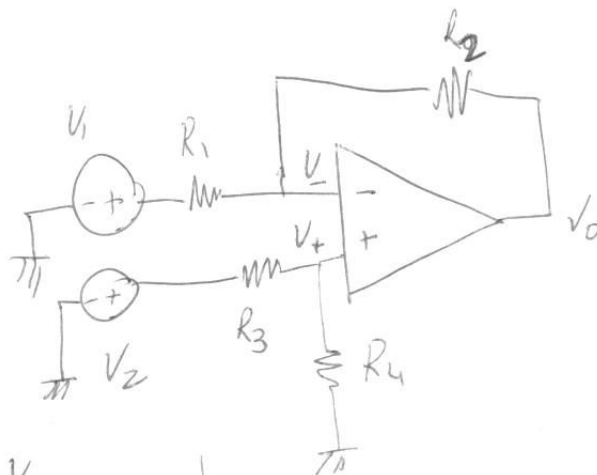
KCL @ V_- : $-\frac{V_1}{R_1} + -\frac{V_2}{R_2} + -\frac{V_3}{R_3} - \frac{V_0}{R_0} = 0$

$$\Rightarrow V_0 = -\frac{1}{R_0} \left[\frac{V_1}{R_1} + \frac{V_2}{R_2} + \frac{V_3}{R_3} \right]$$

Slide 21:

NFB: ✓

SPC: $V_+ = V_-$
 $i_+ = i_- = 0A$



KCL @ V_+ : $\frac{V_+ - V_2}{R_3} + \frac{V_+}{R_4} = 0$

$$V_+ = \frac{V_2 \cdot R_4}{R_3 + R_4}$$

$$V_- = V_+ = V_2 \cdot \frac{R_3}{R_3 + R_4}$$

KCL @ V_-

$$\frac{V_- - V_1}{R_1} + \frac{V_- - V_0}{R_2} = 0$$

$$V_0 = V_- + \frac{V_- - V_1}{R_1} \cdot R_2$$

ooo

...

$$V_o = V_2 \left[\frac{R_3}{R_3 + R_4} \right] \left[1 + \frac{R_2}{R_1} \right] - \frac{V_1 \cdot R_2}{R_1}$$

slide 23

NFBV

SPC: $V_1 = V_2 = 0V$

$i_1 = i_2 = 0A$

$$i = C \frac{dV_{in}}{dt}$$

$$V_o = -RC \frac{dV_{in}}{dt}$$

