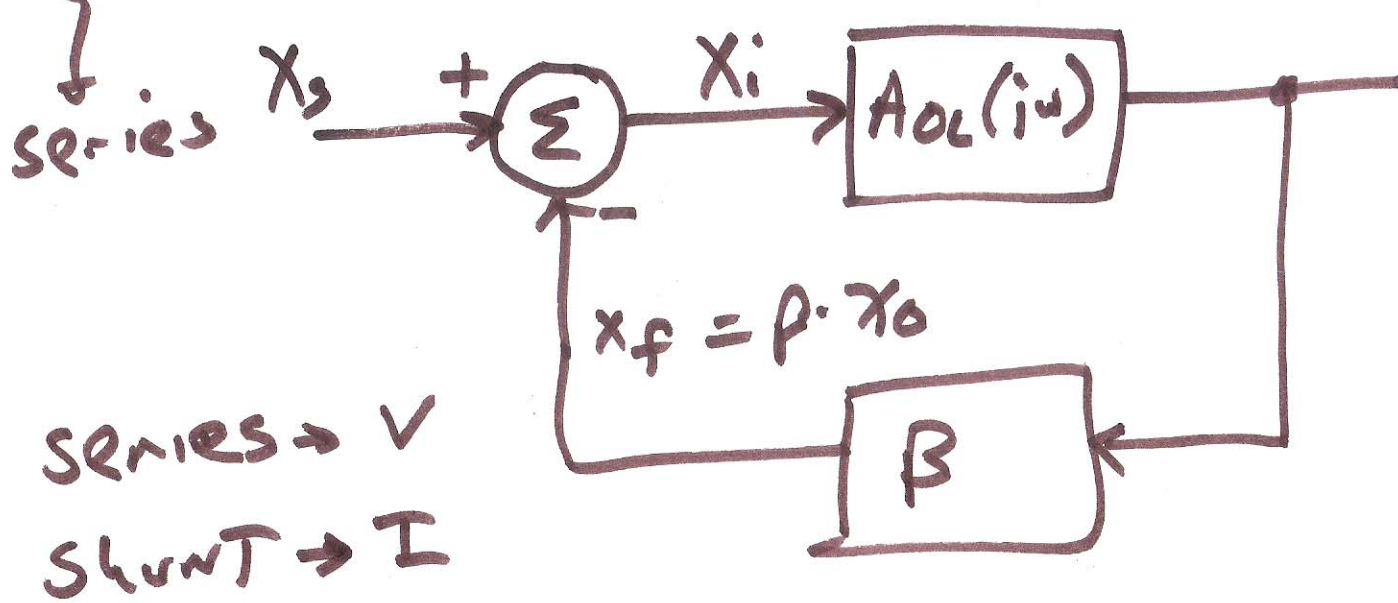
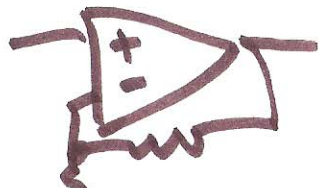


Section 31.3/31.3.1/31.3.2/31.3.3

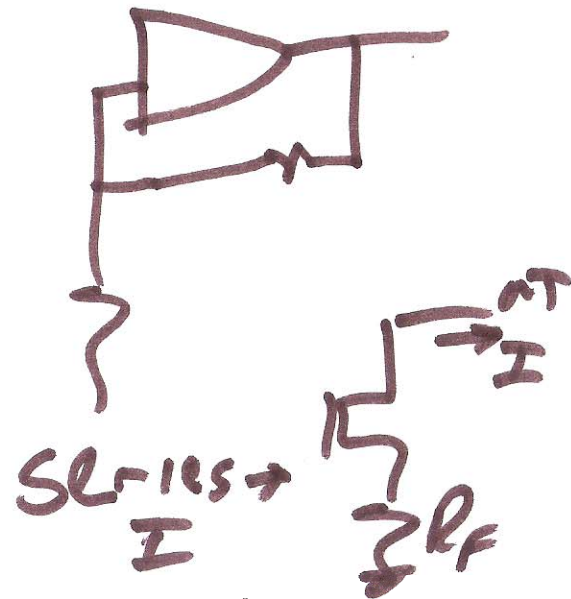
Recognizing feed back Topologies

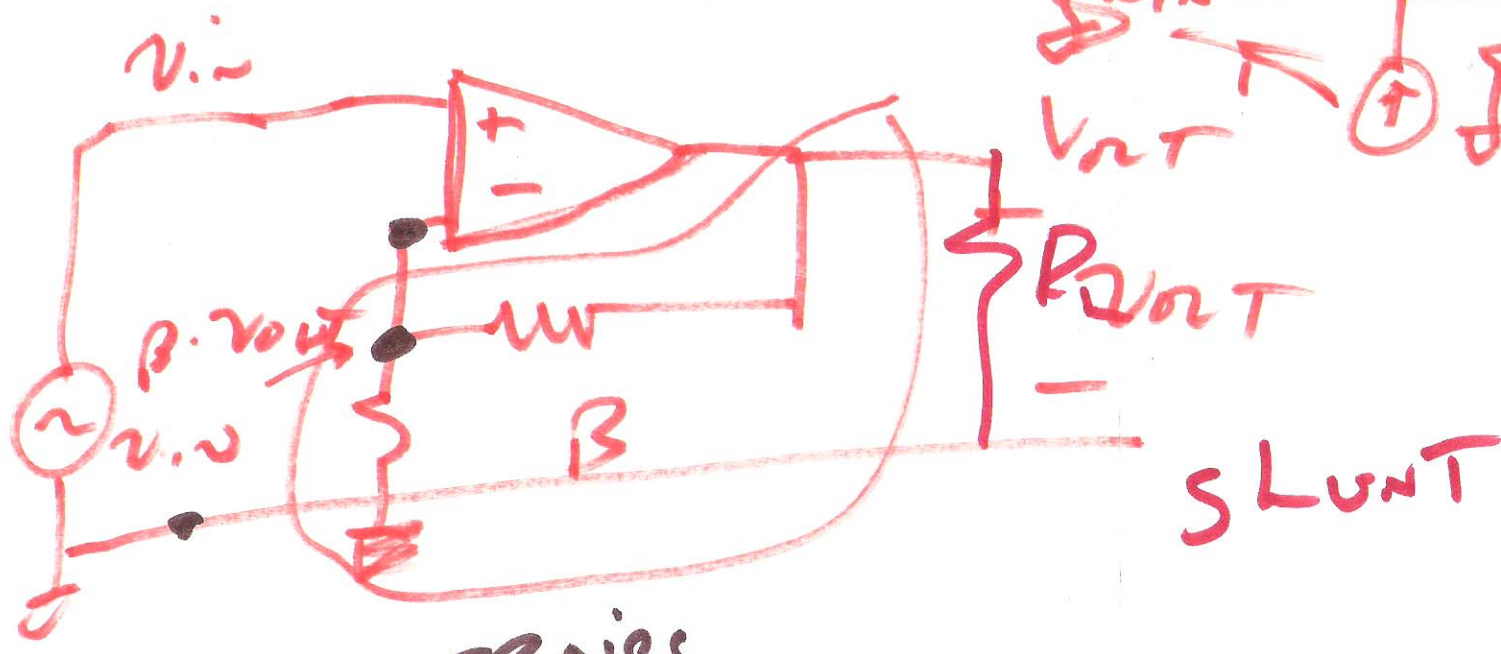
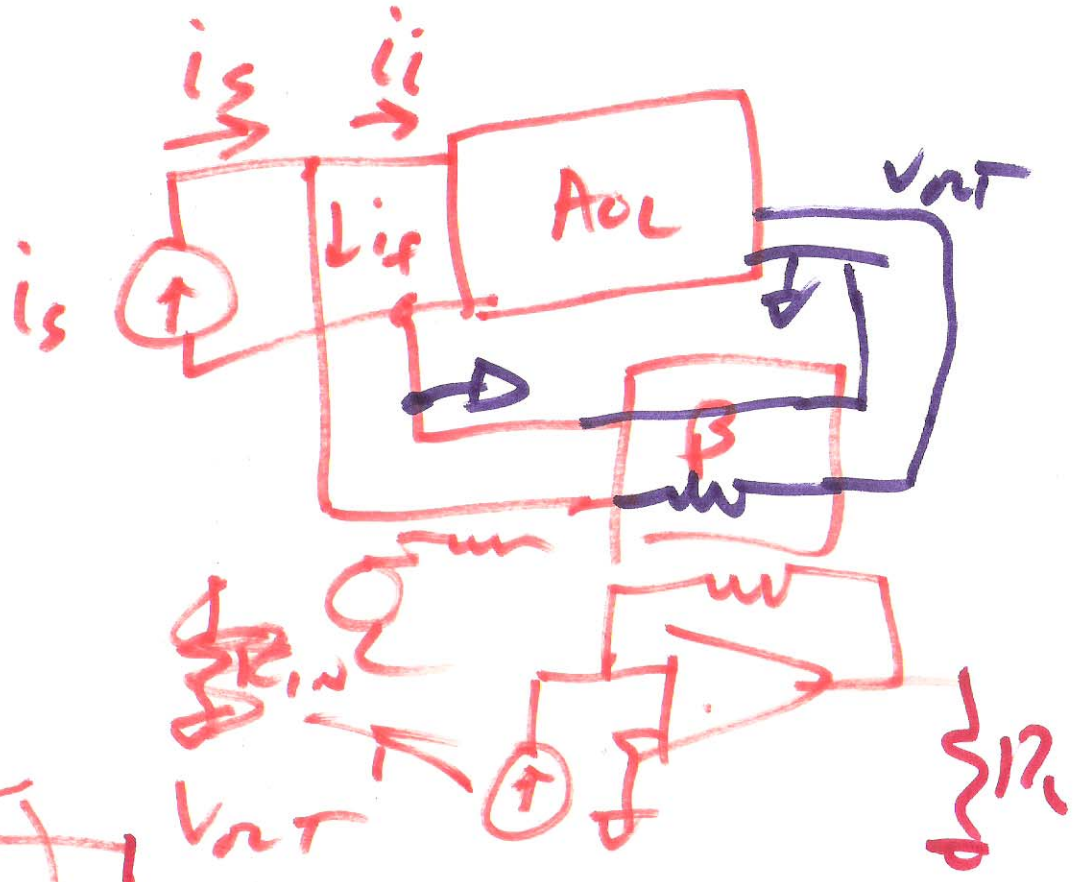
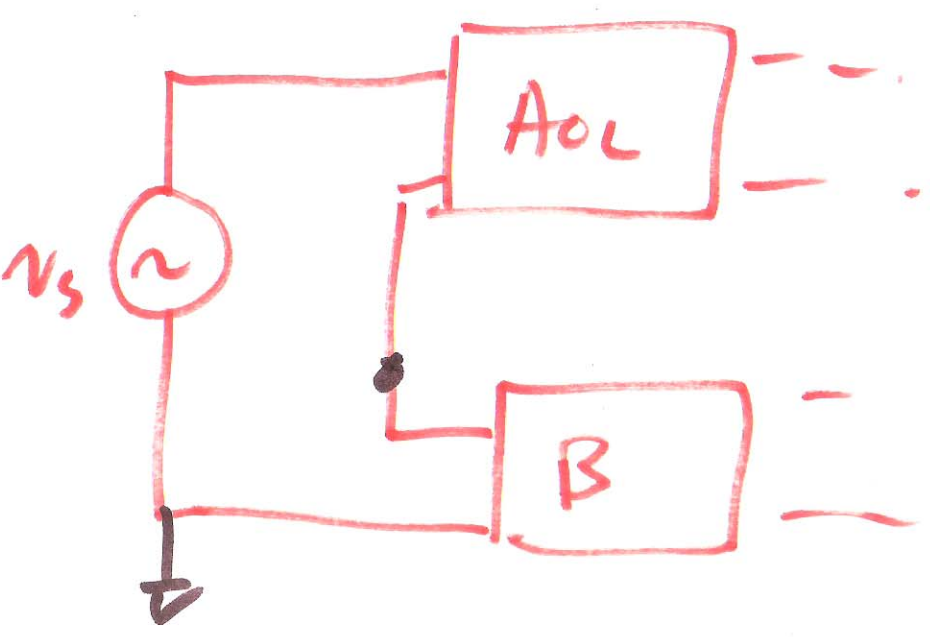


$$X_o = A_{OL}(j\omega) \cdot (X_s - \beta \cdot X_o)$$

Shunt \rightarrow V

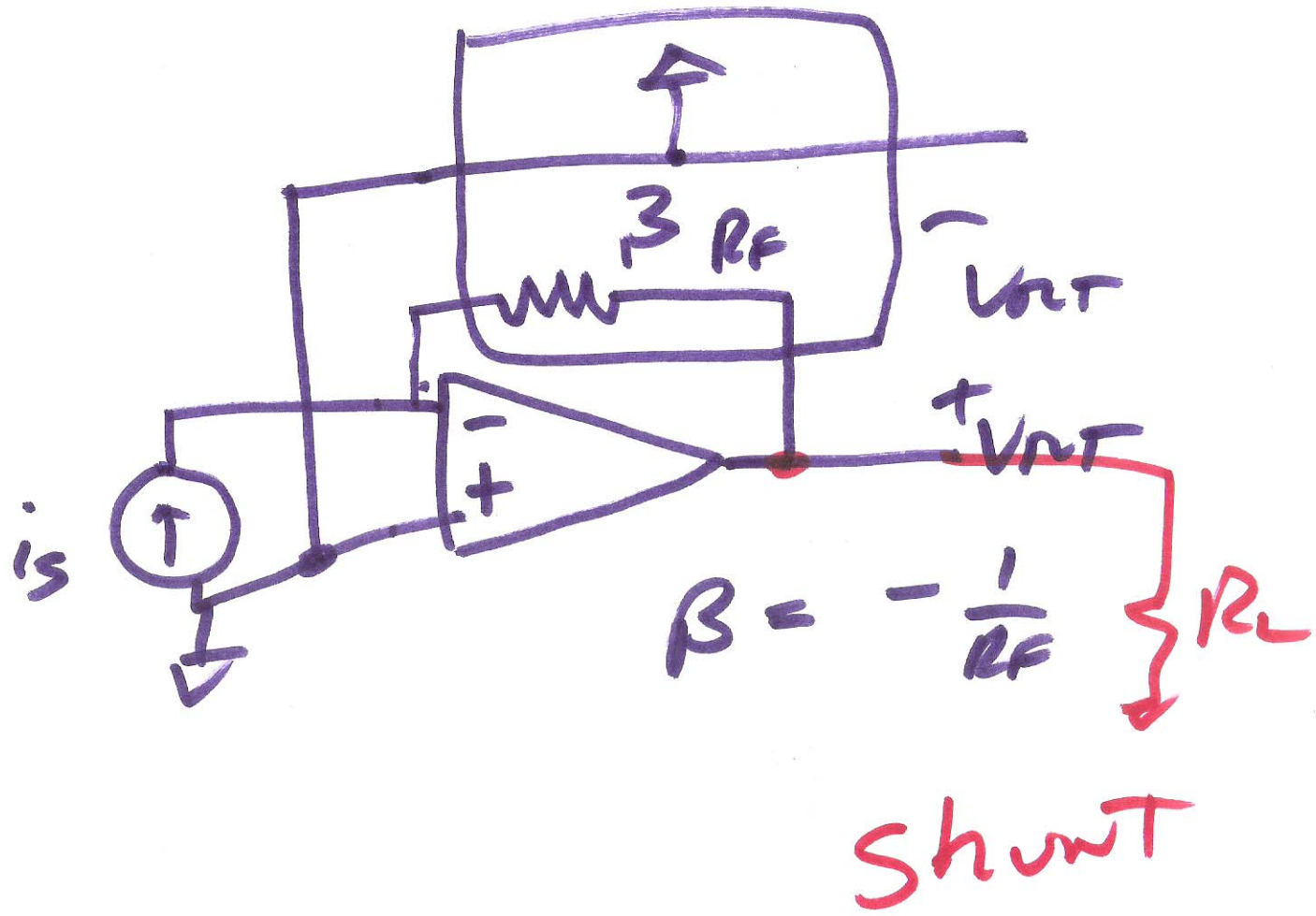
Series \rightarrow V
Shunt \rightarrow I





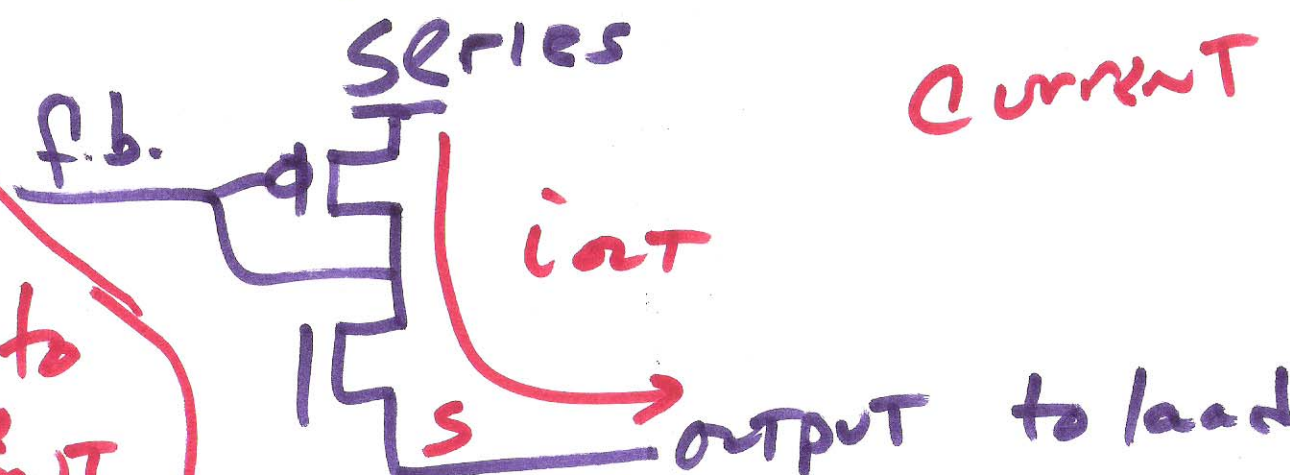
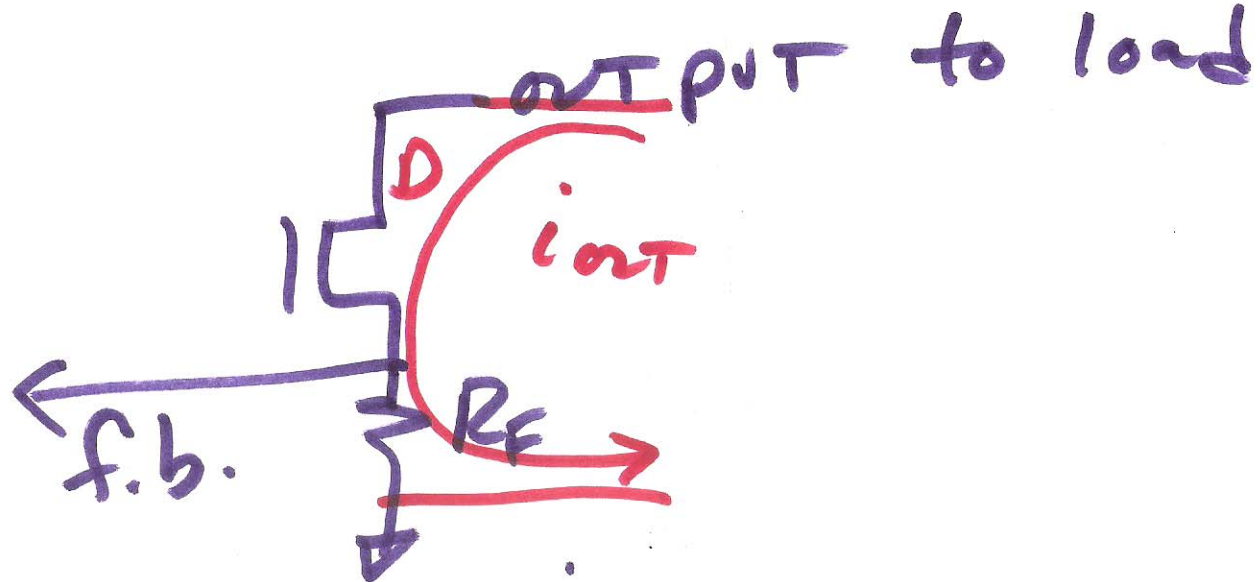
series voltage

2)



3)

OUTPUT SAMPLING

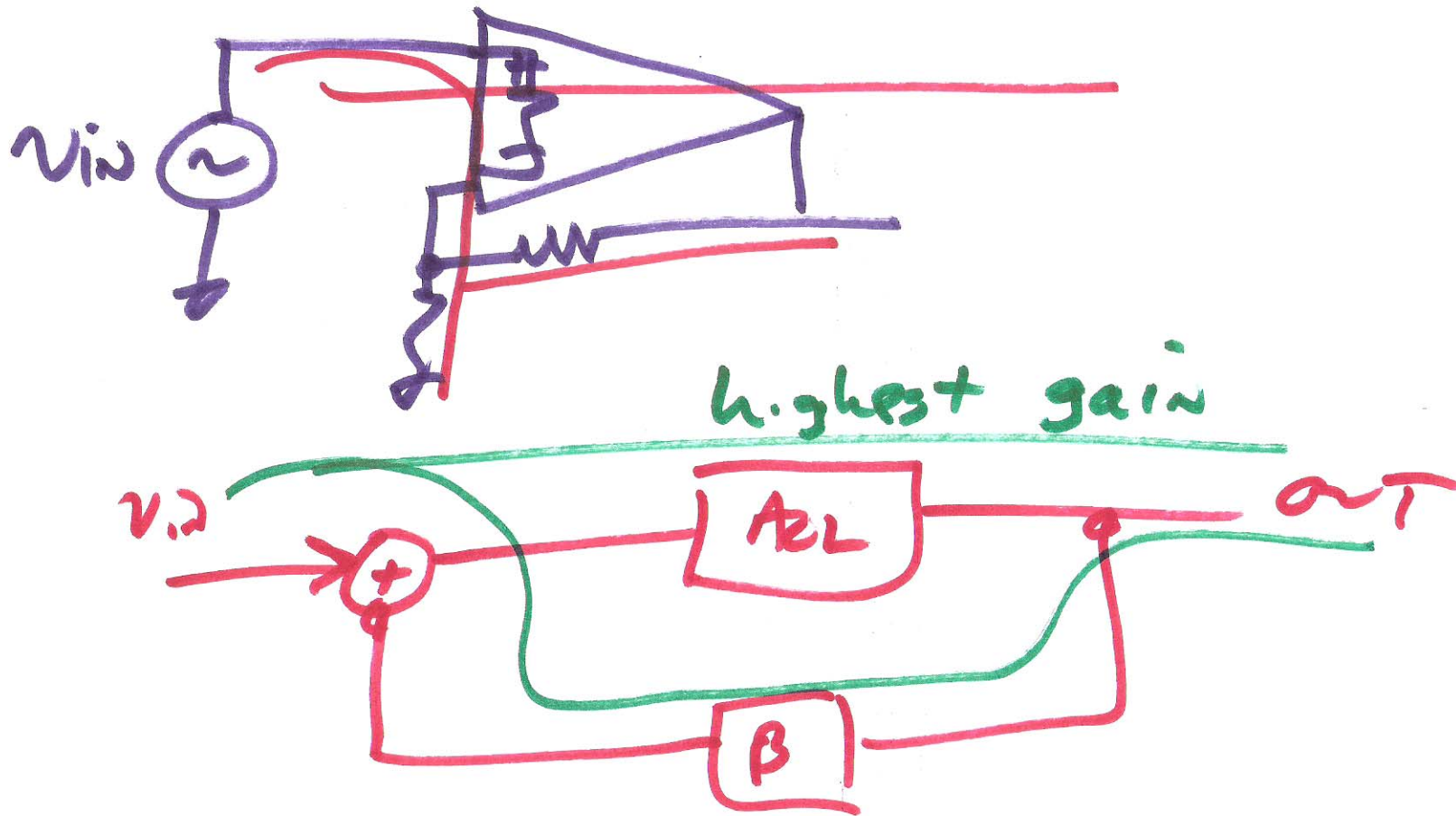


Current

Load & f.b. connected to same node then output is short

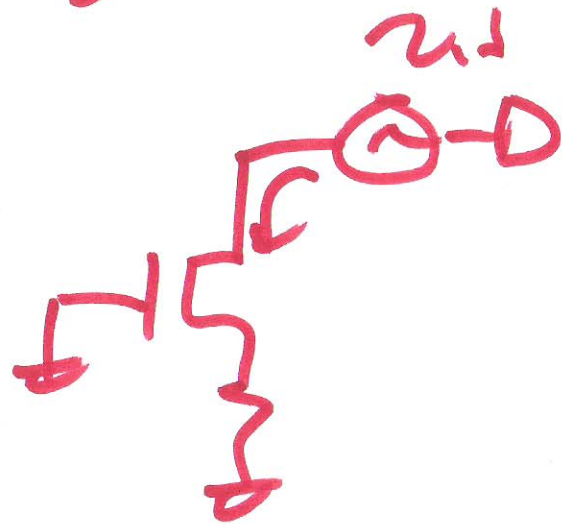
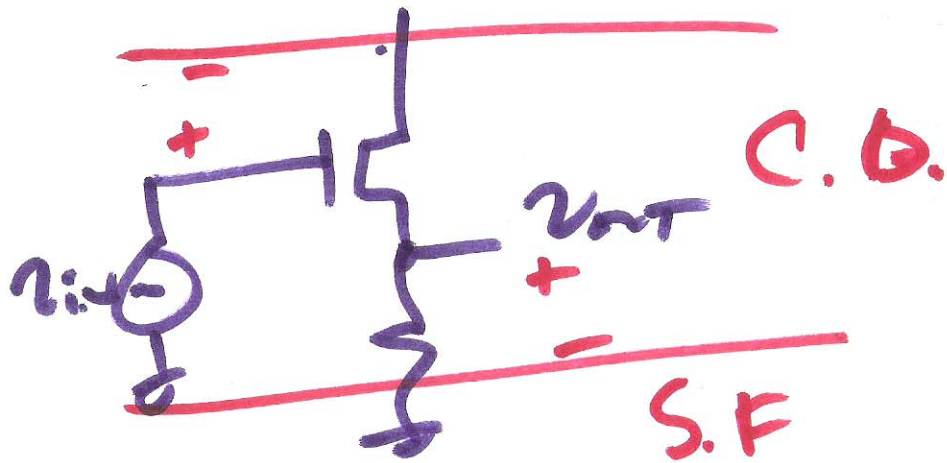
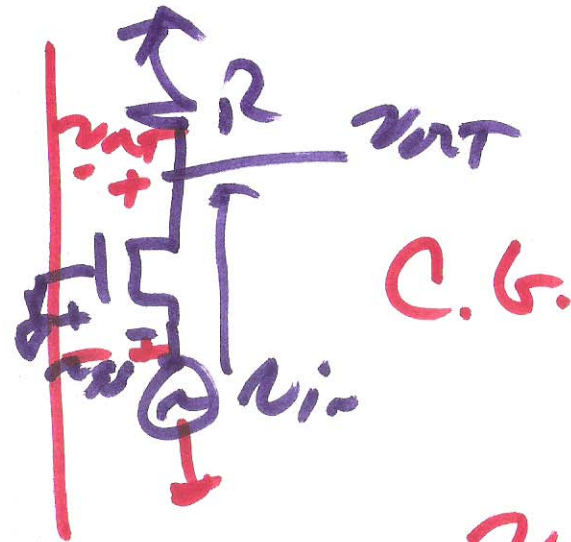
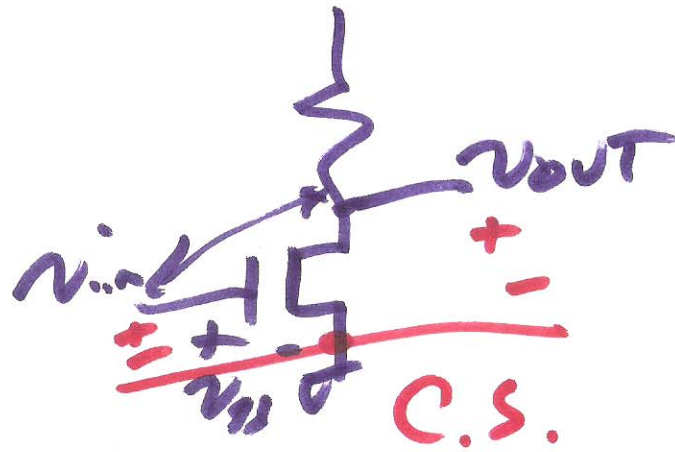
Series, Load & f.b. connected to diff. places

1) The forward path is the highest gain path.

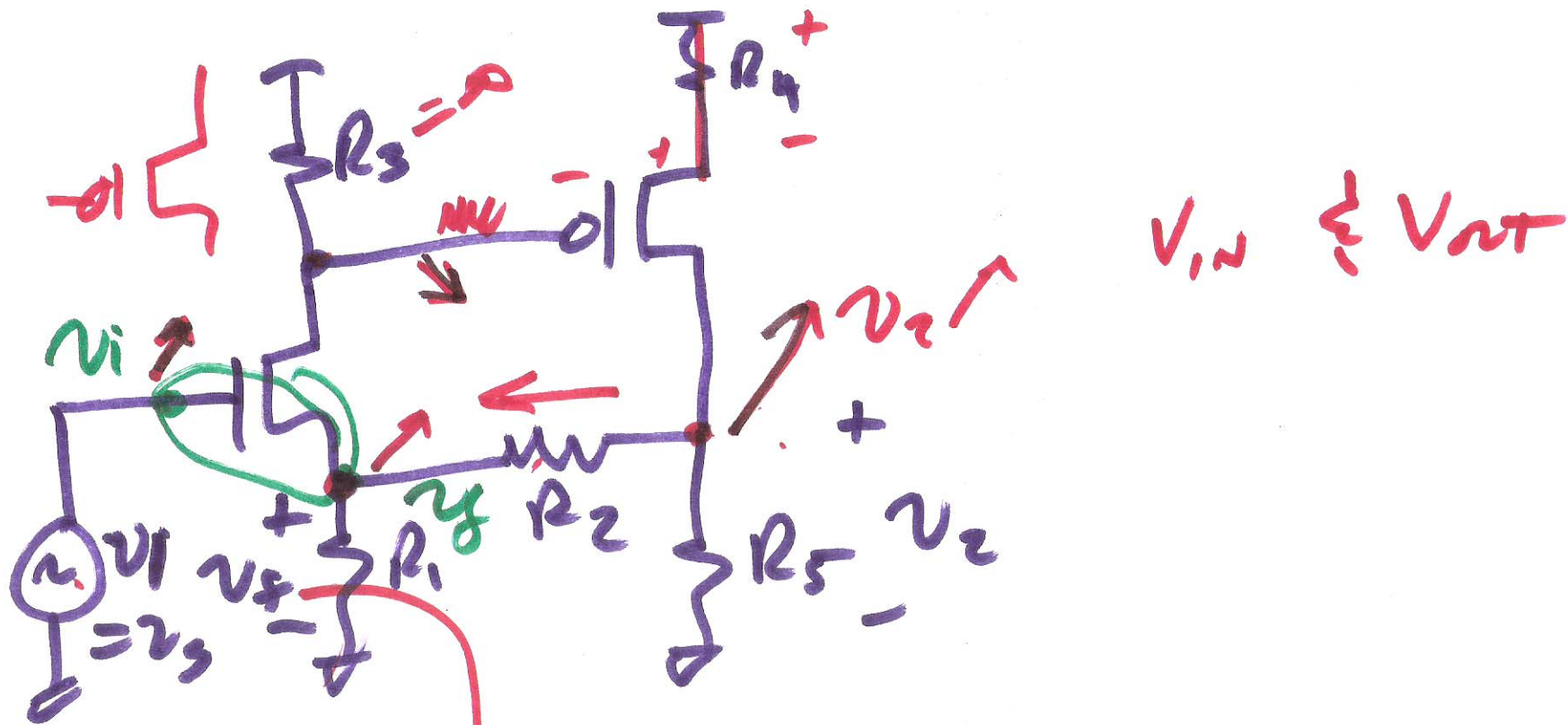


5)

AC enters through gate or source and exits through drain or source



6)



31.8 (a)

$$v_f = \frac{R_1}{R_1 + R_2} \cdot v_o$$

SERIES

SHUNT

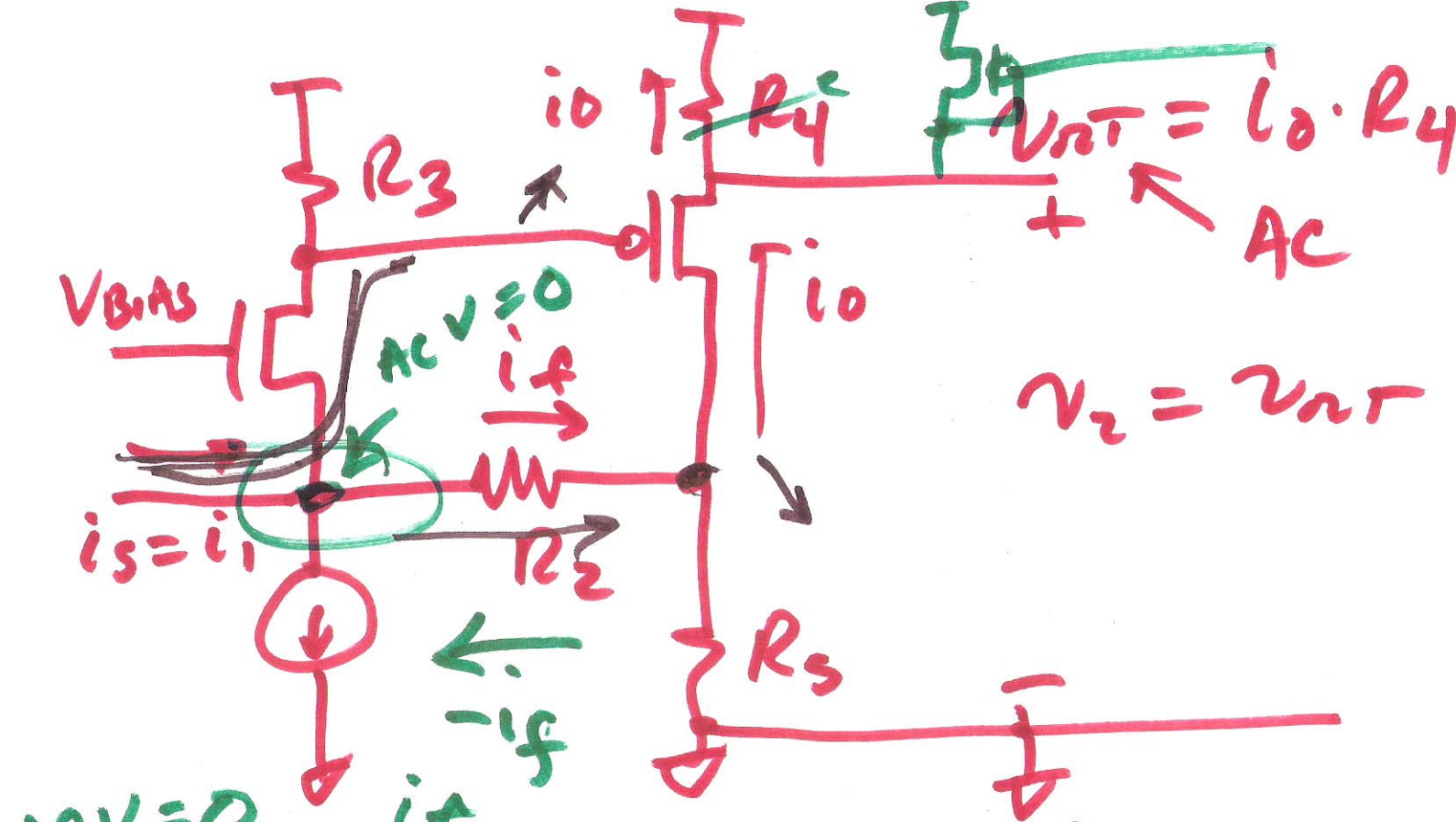
$$v_i - v_f$$

Non-inverting

topology

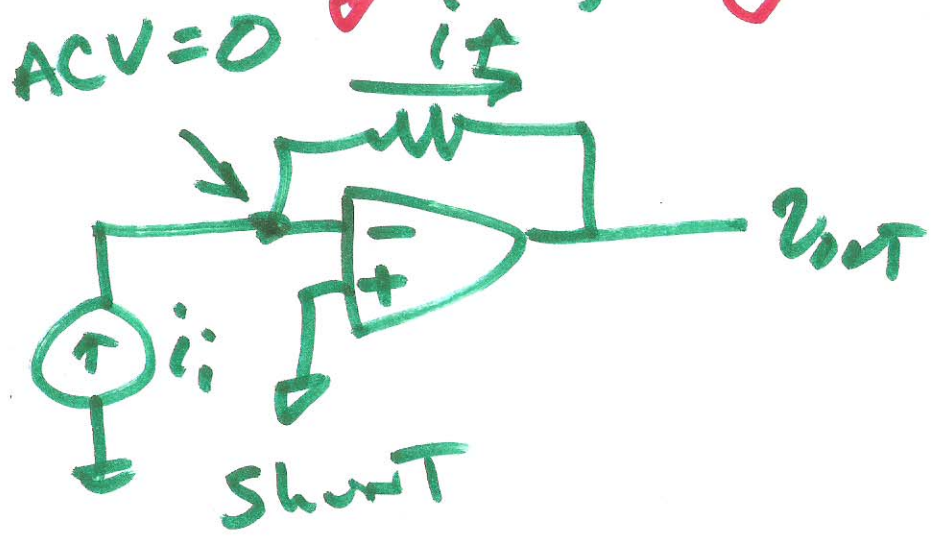
v_{in}



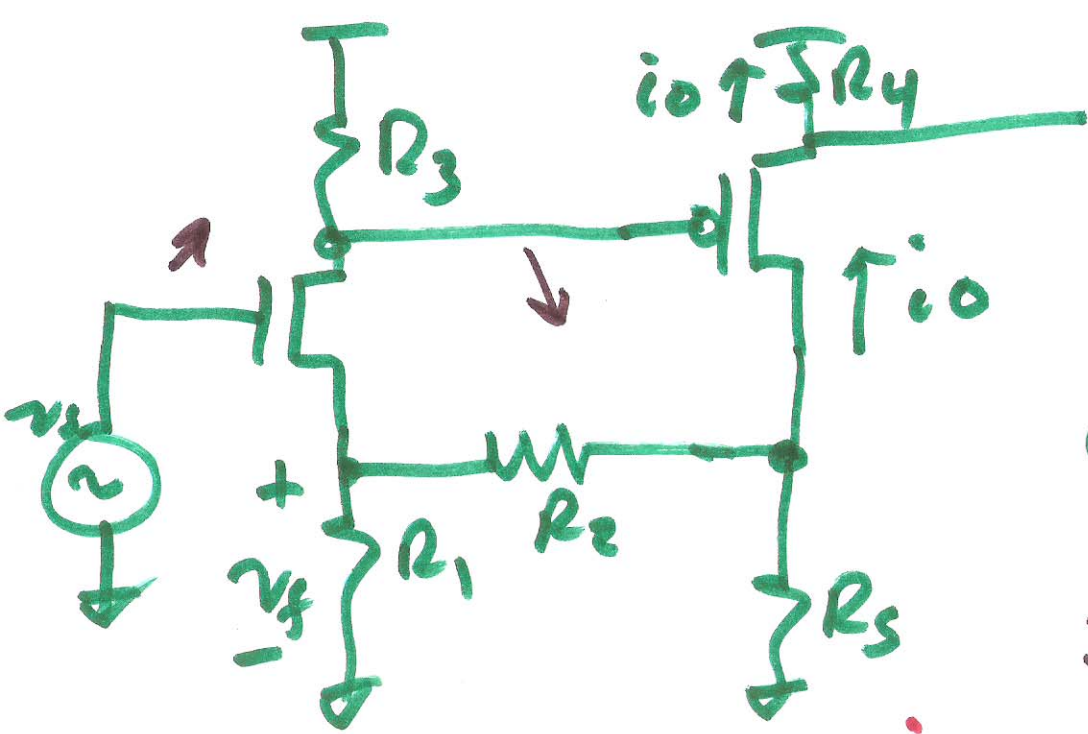


series

Shunt - series
 I_{in} I_{out}
 CURRENT AMP



8)

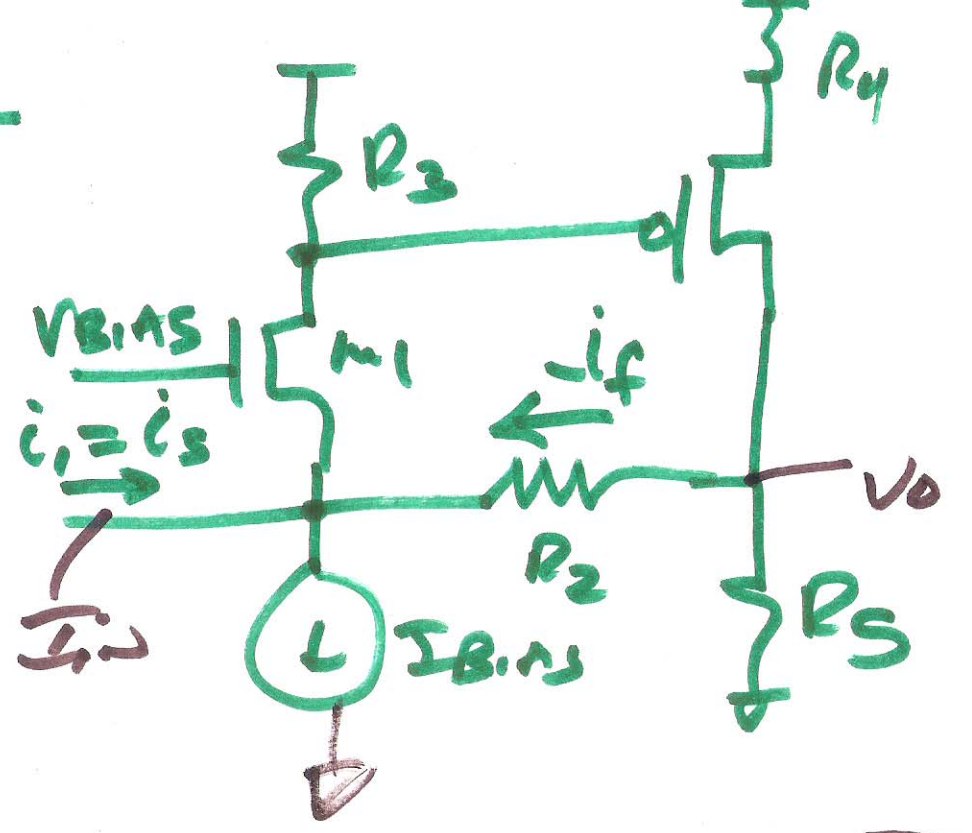


Series
 V_{in}

series
 I_o

TRANSconductance

$$\frac{I_o}{V_{in}}$$



Shunt
 I_{in}

Shunt
 V_{out}

TRANSimpedance

$$\frac{V_{out}}{I_{in}}$$

9)