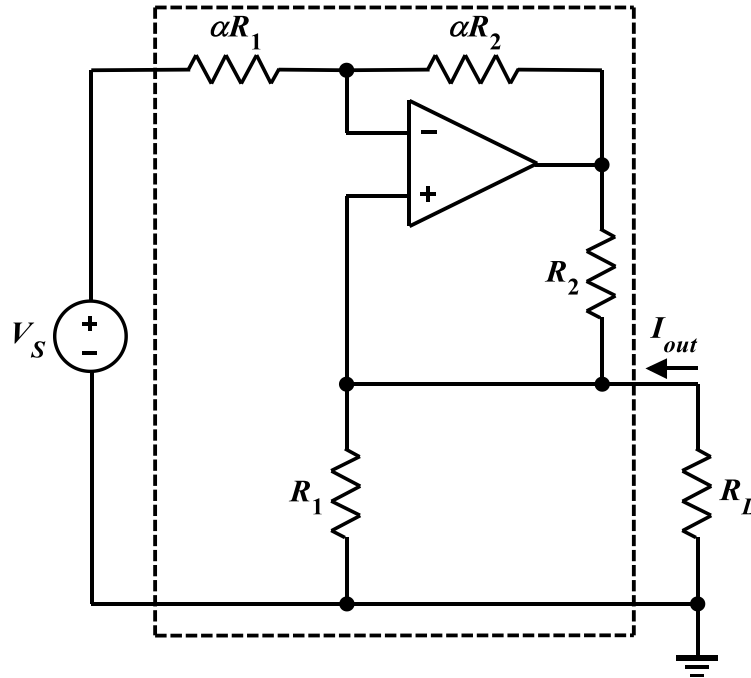


## Homework Problem #05



Using the circuit from Homework Problem #4 (copied above), design a voltage-to-current converter to meet the following requirements:

- $V_S = 5 \text{ V}$ .
- $I_{out} = 10 \text{ mA}$  when the load resistance  $R_L$  varies from  $100 \Omega$  to  $500 \Omega$ .
- The current drawn from the source  $V_S$  is no larger than  $0.5 \text{ mA}$ .
- The op amp output voltage is no larger than its saturation value of  $V_{sat} = 20 \text{ V}$ .