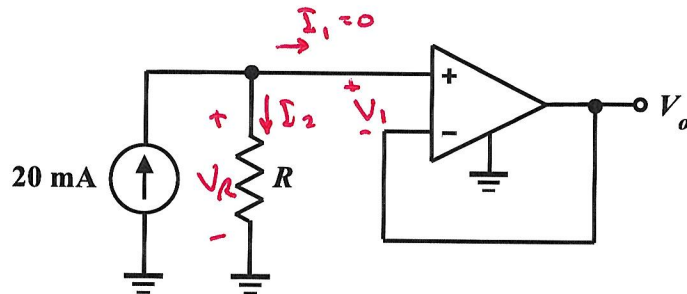


EE 2240
Homework Problem #051



The OpAmp is ideal. Determine the value of R required to make $V_0 = 10\text{V}$.

$$V_1 = 0 \Rightarrow V_R = V_1 + V_0 = V_0$$

$$I_1 = 0 \Rightarrow I_2 = 20\text{ mA}$$

$$\therefore V_R = R I_2 = R(20\text{ mA})$$

$$\text{But } V_0 = 10\text{ V}$$

$$\Rightarrow R(20\text{ mA}) = 10\text{ V}$$

$$\text{So } R = \frac{10\text{ V}}{20\text{ mA}} = 500\ \Omega$$