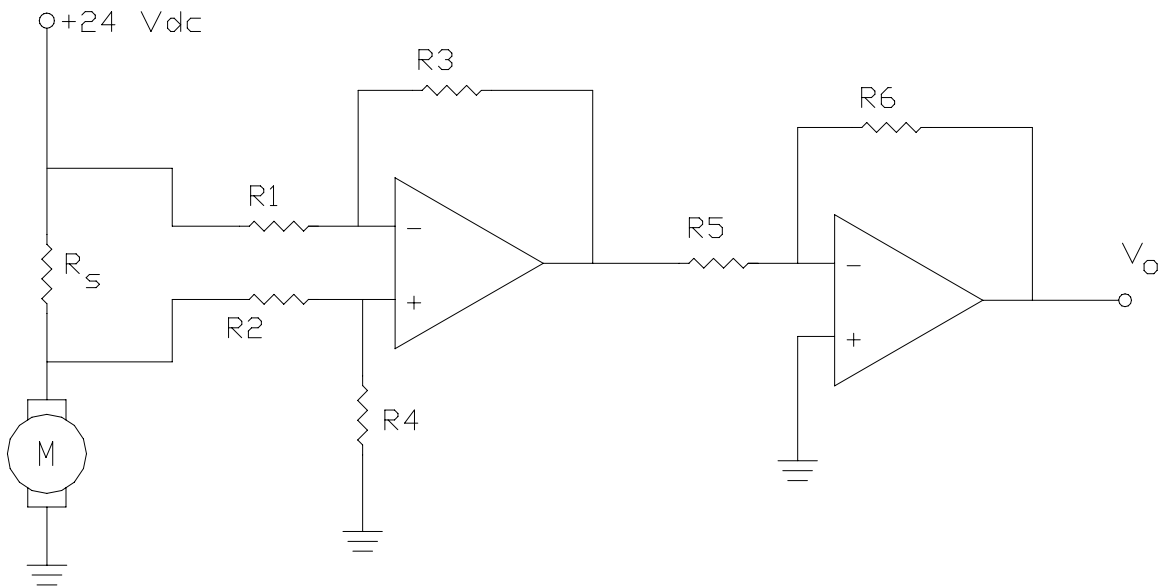


ET 438B
Differential Amplifier Application

For the circuit below has the following values

$$\begin{aligned} R_s &= 0.12 \, \Omega & R_1 &= R_2 = 100 \, \text{k}\Omega & R_3 &= R_4 = 470 \, \text{k}\Omega \\ R_5 &= 10 \, \text{k}\Omega & R_6 &= 82 \, \text{k}\Omega \\ V_0 &= -7.875 \, \text{Vdc} \end{aligned}$$

The circuit is designed to sense the load current of the dc motor/generator M by



measuring the voltage drop across the shunt resistor R_s . Find the magnitude and direction of the current supplied to motor/generator.