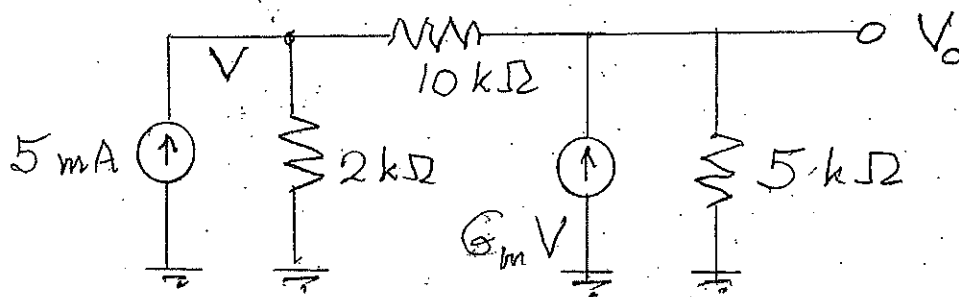


## ECE 580 HOMEWORK 3

Due Nov. 19, 2018

1. Using the adjoint network, find the sensitivities of  $V_o$  to changes of the transconductance  $G_m$ . The nominal value is  $G_m = 3 \text{ mA/V}$ .



2. Prove that the phase shift of a lumped linear two-port is an odd function of the frequency, so that  $\beta(-\omega) = -\beta(\omega)$ .