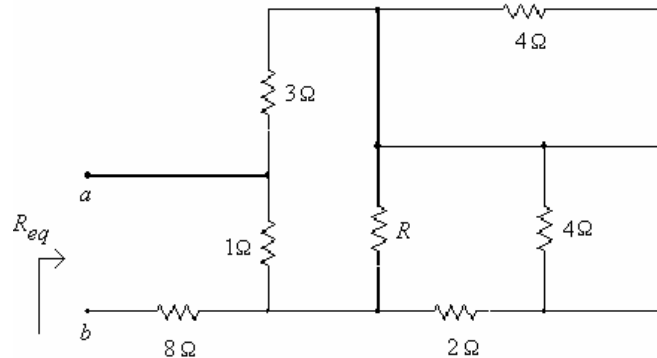


ECE 201: Linear Circuit Analysis I:

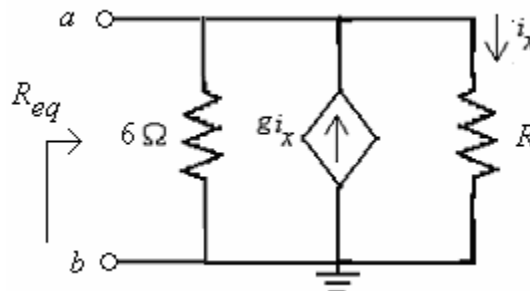
Exercise: Chapter 3

Design Problem(s)

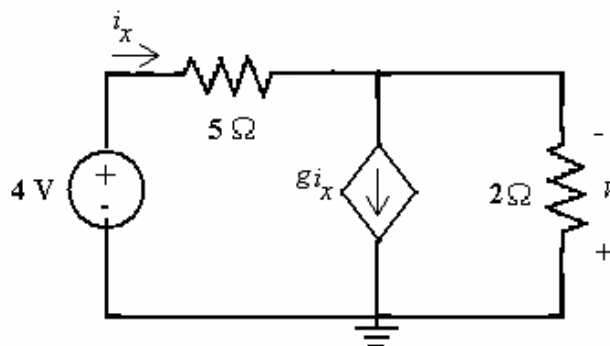
- The following shows a simplified schematic diagram for an expensive car audio system, which includes speakers and amplifiers. Usually, one can produce the loudest sounds if R_{eq} is small. Find R so that R_{eq} is 1Ω .



- A designer requires the circuit below to exhibit a resistance of R_{eq} at terminals a-b of 24Ω . Select a suitable value for the dependant source constant g and resistance R when you are restricted to $1 \leq g \leq 5$.



- The circuit below has an unspecified dependent source constant. Select the constant g such that the output voltage v is 16 V .



4. A model of a vinyl record player, stereo amplifier, and speaker system is shown below. The manufacturer of the speaker specifies that the voltage across the speaker cannot be greater than 8 volts. Determine the resistance R so that the voltage across the load is at its maximum as well as the power delivered to the speaker.

