Circuit Lab

 $V_3 = 3.20 \,\text{V}$

 $R_3 = 197\,\Omega$

 $I_3 = 16.0 \,\mathrm{mA}$

 $R_3 = 620 \,\Omega$

 $I_3 = 19.4 \,\mathrm{mA}$.

 $V_3 = 12.0 \,\mathrm{V}$

 $R_3 = 614 \,\Omega$

 $R_2 = 150\,\Omega$

 $I_2 = 30.9 \,\mathrm{mA}$

 $V_2 = 4.64 \,\mathrm{V}$

 $R_2 = 150\,\Omega$

 $I_2 = 30.8 \,\mathrm{mA}$

 $I_3 = 19.4 \,\mathrm{mA}$

 $V_3 = 11.93 \,\mathrm{V}$

 $R_4 =$

 $I_4 =$

 $V_4 =$

 $V_3 = 3.18 \,\mathrm{V}$

 $R_2 = 181 \,\Omega$ $I_2 = 16.0 \,\mathrm{mA}$ $V_2 = 2.92 \,\mathrm{V}$

Kade Jorud, Connor LaSota, and Luke Tollefson

 $R_1 = 100 \,\Omega$ $I_1 = 16.0 \,\mathrm{mA}$ $V_1 = 1.60 \,\mathrm{V}$

 $R_2 = 180\,\Omega$

 $I_2 = 16.0 \,\mathrm{mA}$ $V_2 = 2.88 \,\mathrm{V}$ $R_3 = 200 \,\Omega$ $R_4 = 270 \,\Omega$ $I_4 = 16.0 \,\mathrm{mA}$ $I_3 = 16.0 \,\mathrm{mA}$

Figure 1: Predicted currents and voltages for series circuit.

Figure 2: Experimental resistances, currents, and voltages for series circuit.

Figure 3: Predicted currents and voltages for parallel circuit.

Figure 4: Experimental resistances, currents, and voltages for parallel circuit.

 $R_3 = 680 \,\Omega$ $I_3 = 7.7 \,\mathrm{mA}$ $V_3 = 5.26 \,\mathrm{V}$

 $R_4 = 680\,\Omega$ $I_4 = 7.7 \,\mathrm{mA}$ $V_4 = 5.26 \,\mathrm{V}$

 $R_5 = 620 \,\Omega$ $I_5 = 8.5 \,\mathrm{mA}$ $V_5 = 5.26 \,\mathrm{V}$

 $R_6 = 750\,\Omega$ $I_6 = 7.0 \,\mathrm{mA}$ $V_6 = 5.26 \, \text{V}$

Figure 5: Predicted currents and voltages for complex circuit.

 $12.0\,\mathrm{V}$

 $R_3 = 682 \,\Omega$ $I_3 = 7.6 \,\mathrm{mA}$ $V_3 = 5.25 \,\mathrm{V}$

 $R_4 = 668 \,\Omega$ $I_4 = 7.8 \,\mathrm{mA}$ $V_4 = 5.25 \, \text{V}$

 $R_5 = 615 \,\Omega$ $I_5 = 8.4 \,\mathrm{mA}$ $V_5 = 5.25 \, \mathrm{V}$

 $R_6 = 750\,\Omega$ $I_6 = 6.9 \,\mathrm{mA}$ $V_6 = 5.25 \, \text{V}$

Figure 6: Experimental resistances, currents, and voltages for complex circuit.

 $R_2 = 680 \,\Omega$

 $I_2 = 17.6 \,\mathrm{mA}$

 $V_2 = 12.0 \, \text{V}$

 $R_2 = 666 \,\Omega$

 $I_2 = 17.8 \,\mathrm{mA}$ $V_2 = 11.93 \,\mathrm{V}$

 $R_1 = 97 \,\Omega$ $I_1 = 16.0 \,\mathrm{mA}$ $V_1 = 1.57 \,\text{V}$

 $V_4 = 4.32 \, \text{V}$

 $R_4 = 266 \,\Omega$

 $I_4 = 16.0 \,\mathrm{mA}$

 $R_1 = 680 \,\Omega$ $I_1 = 17.6 \,\mathrm{mA}$

 $R_1 = 680 \,\Omega$ $I_1 = 17.4 \,\mathrm{mA}$

 $R_1 = 68 \,\Omega$

 $I_1 = 30.9 \,\mathrm{mA}$

 $V_1 = 2.10 \,\text{V}$

 $R_1 = 68 \Omega$ $I_1 = 30.8 \,\mathrm{m}$

 $V_1 = 2.09 \, \text{V}$

 $V_4 = 4.29 \, \mathrm{V}$