Problem 2: Using the circuit in Figure 1,
- Calculate the equivalent resistance, $R_{eq}$
- Calculate the current $i$ and show its direction of flow on the figure.
- Calculate the voltage drop, $v_1$ and $v_2$ across each resistor.

Figure 1: Circuit for Problem 1

\[ V_1 = \frac{1}{1 + \frac{3}{1}} \cdot 4 = 1V = v_1 \]

\[ V_2 = \frac{3}{1 + \frac{3}{1}} \cdot 3 = 3V = v_2 \]

Problem 3: Using the circuit in Figure 2,
- Calculate the equivalent resistance, $R_{eq}$
- Calculate the currents $i_1$, $i_2$, $i_3$, and $i_4$

Figure 2: Circuit for Problem 2

Also: $i_3 = i_4$ and $i_2 = 2i_4$

So, Possible by Reasoning

\[ i_2 = \frac{1}{2} \cdot 4A = \frac{1}{2} \cdot 4 = 2A = i_4 \]

\[ i_3 = \frac{1}{2} \cdot 4A = \frac{1}{2} \cdot 4 = 2A = i_2 \]

\[ i_4 = \frac{1}{2} \cdot 4A = \frac{1}{2} \cdot 4 = 2A = i_3 \]