1. Reduce this network to a single resistance. What is its value?

\[ \begin{array}{c}
10 \\
20 \\
30 \\
40 \\
50 \\
60 \\
70 \\
80 \\
\end{array} \]

2. Find the power dissipated in the 2Ω resistor [Prob. 28.78, Knight].

\[ \begin{array}{c}
4 \Omega \\
12 \text{ V} \\
2 \Omega \\
15 \text{ V} \\
\end{array} \]

3. The ammeter A reads 0.3 A. Find \( I_1 \), \( I_2 \), and \( V_2 \) [Prob. 28.52, Knight].
4. Find the Thévenin equivalent to the following circuit using $R_1 = R_2 = R_3 = 100 \Omega$.

![Circuit Diagram](image)

Using this result, find the current $I_3$ in the circuit below with $V_1 = 1 \text{ V}$ and $V_2 = 2 \text{ V}$.

![Circuit Diagram](image)

5. In the circuit below, compute the current $I$ through the top-middle resistor. Hint: the top middle resistor sits between two voltage dividers. Replace each voltage divider by its Thévenin equivalent [Prob. 1.8, Steck].

![Circuit Diagram](image)
6. Find $V_{\text{out}}$ in the circuit below. [Prob 1.12 a, Steck].

![Circuit Diagram]

7. Find the Thévenin equivalent of the circuit shown below. Note that the arrow indicates a current source, which is just a device that provides the constant current indicated. [Ex. 1.38, H&H]

![Circuit Diagram]