**Problem 2.33** Determine $R_{eq}$ at terminals $(a, b)$ in the circuit of Fig. P2.33.

![Circuit](image)

**Solution:**

![Circuit](image)

Terminals $(a, b)$ are connected together through a short circuit. Hence,

$$R_{eq} = 0.$$
Problem 2.39  Find $R_{eq}$ at terminals $(c,d)$ in the circuit of Fig. P2.38.

Solution:

$$R_{eq} = 4 + 5 + 5 = 14 \Omega.$$
Problem 2.42  Find $R_{eq}$ for the circuit in Fig. P2.42. All resistances are in ohms.

Solution:

\[ R_{eq} = 15 \, \Omega \]
**Problem 2.34** Select $R$ in the circuit of Fig. P2.34 so that $V_L = 5 \text{ V}$.

**Solution:** Multiple application of the source-transformation method leads to the final circuit below.

\[
\begin{align*}
R_1 &= R + 5k \\
I_s &= \frac{25}{R_1} \\
V_s &= I_s R_2 = \frac{25R_2}{R_1} = \frac{50 \times 10^3}{R + 7 \times 10^3} \\
V_L &= V_s = \frac{50 \times 10^3}{R + 7 \times 10^3}
\end{align*}
\]

Since no current flows through $R_3$, 

\[
V_L = V_s = \frac{50 \times 10^3}{R + 7 \times 10^3}.
\]

Setting $V_L = 5 \text{ V}$ leads to 

\[
R = 3 \text{ k}\Omega.
\]