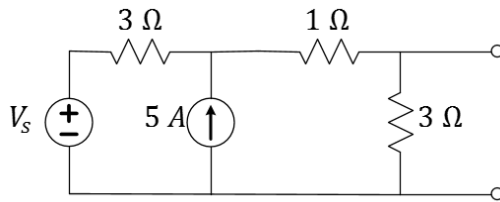
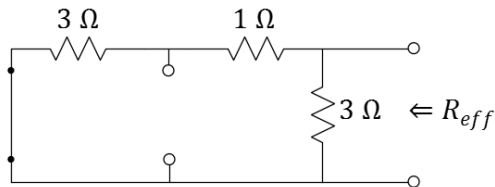


Find the effective resistance,  $R_{eff}$ , for the Circuit.



**Step 1.** Replace the voltage sources with short circuits and the current sources with open circuits.

There is one voltage source and one current source. Replace the voltage source with a short circuit (i.e. a wire). Replace the current source with an open circuit (i.e. no connection).



**Step 2.** Use series and parallel relationships between the remaining resistances to find  $R_{eff}$ .

This leaves only the left-most 3 Ω resistor in series with a 1 Ω resistor. The series combination is in parallel with another 3 Ω resistor.

$$R_{eff} = (3 + 1) || 3 = \frac{4 \cdot 3}{4 + 3} = \frac{12}{7} \Omega$$

Answer:  $R_{eff} = \frac{12}{7} \Omega$