

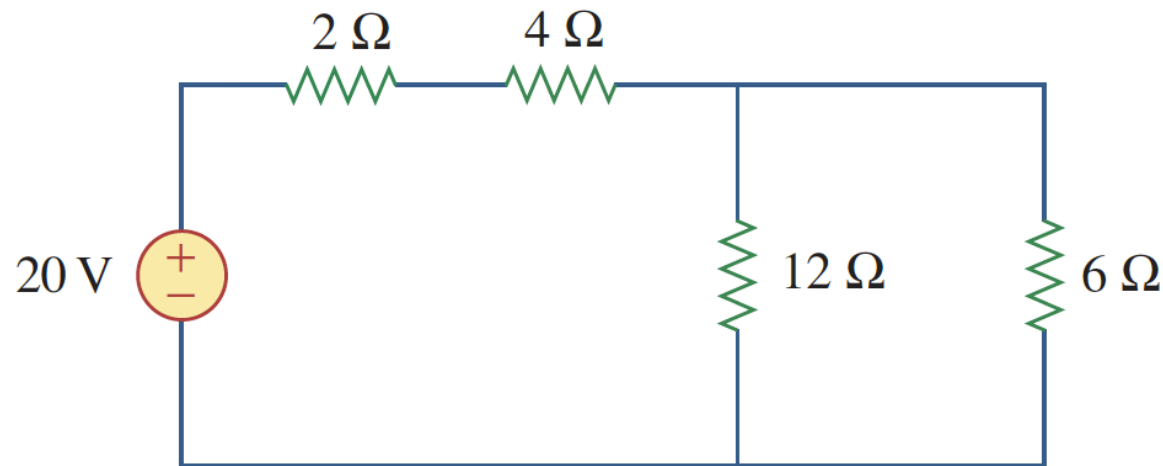
Lecture 5

Basics – 5 of 7

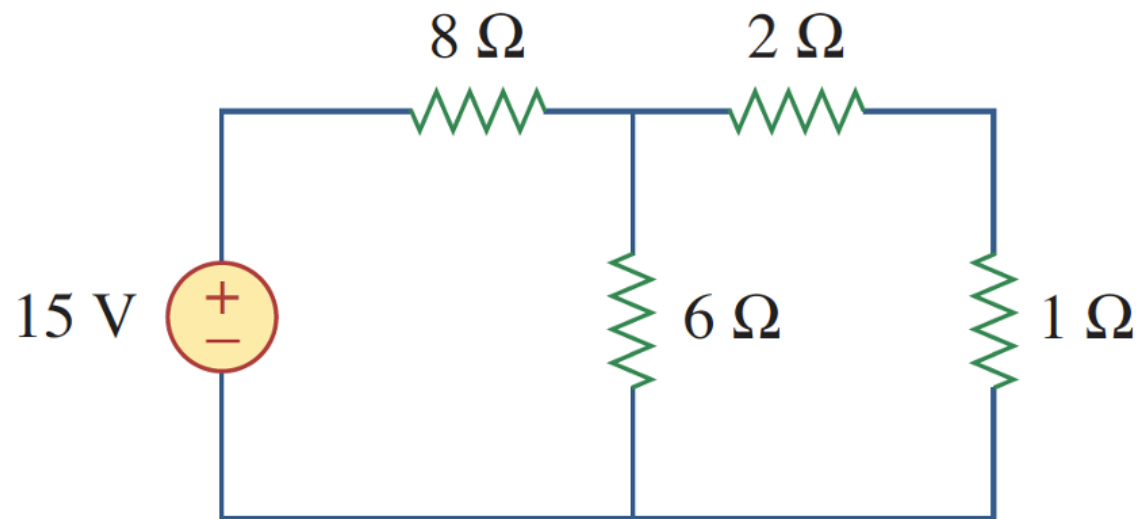
equivalent resistance

Applying Series/Parallel Ideas

- Find the source current

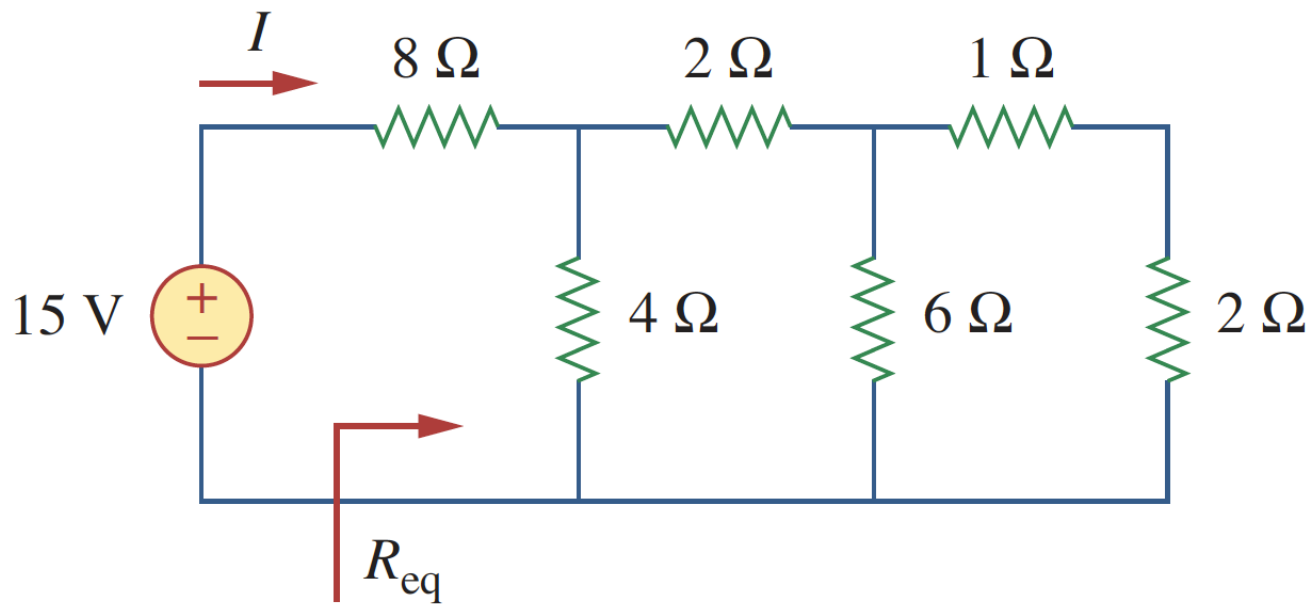


Example: find the source power

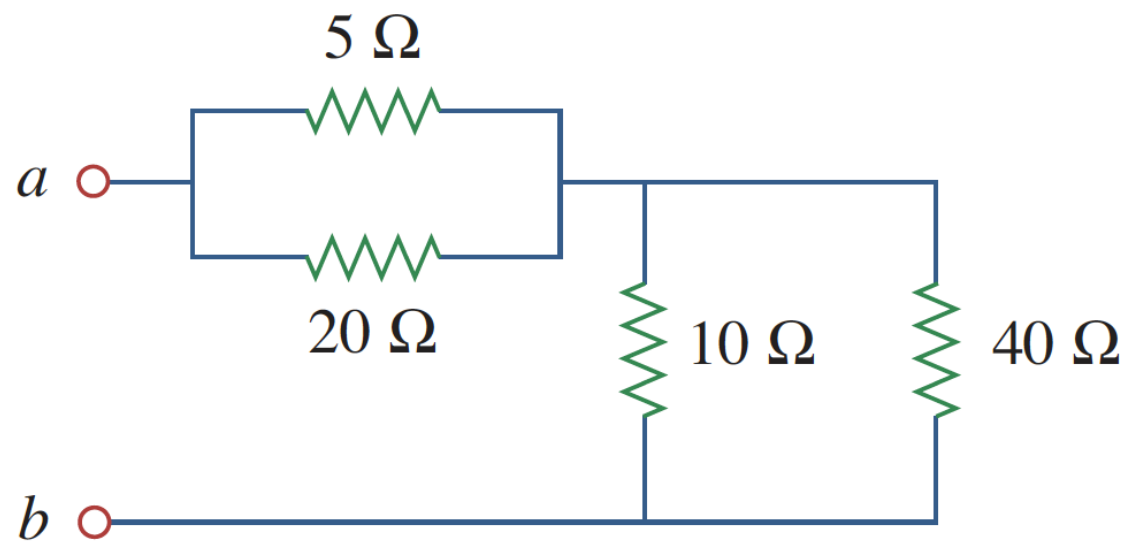


Equivalent Resistance

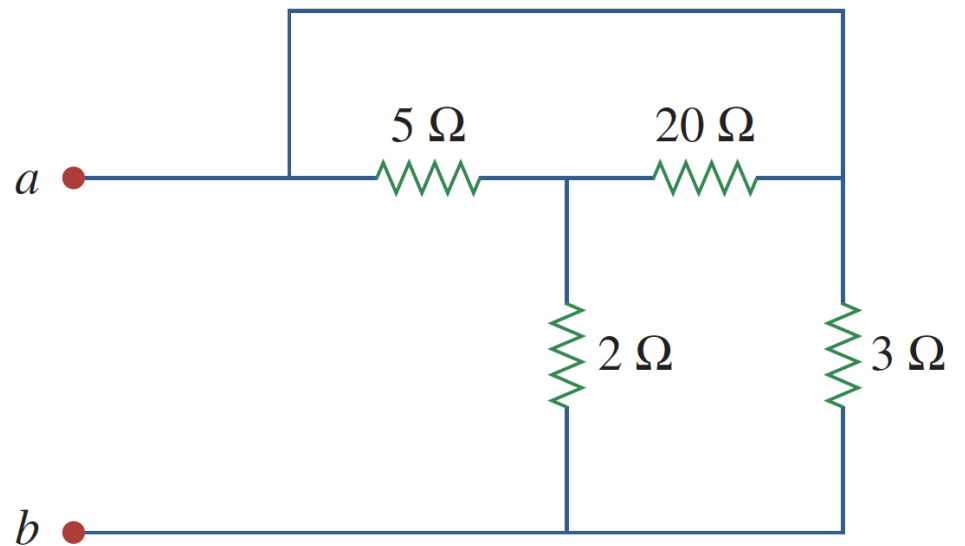
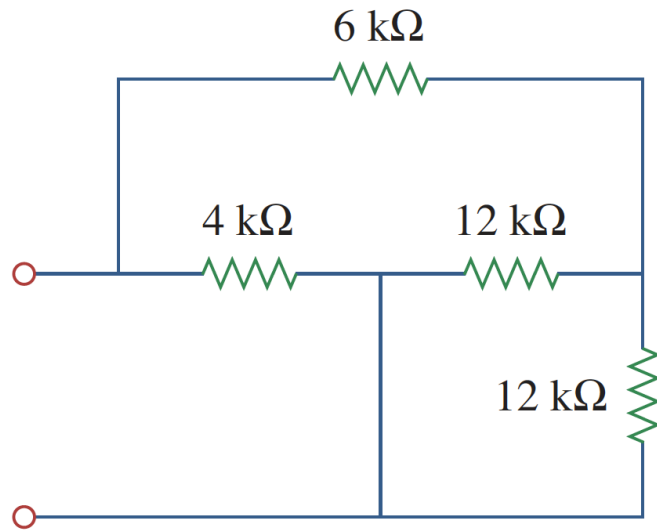
- Concept – use series and parallel combining to find R_{eq} , and hence, to find I



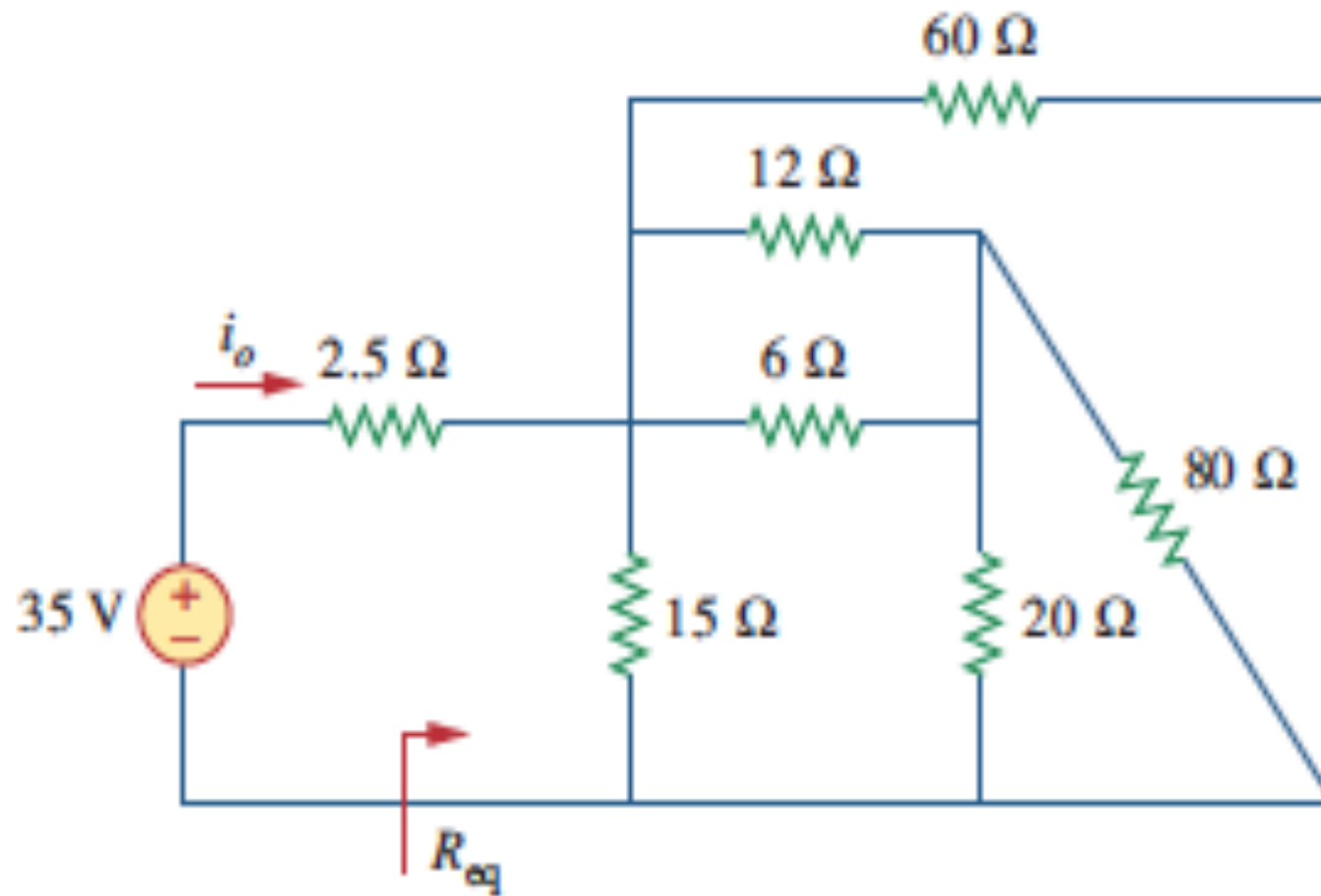
Example:



Sometimes the circuit looks strange

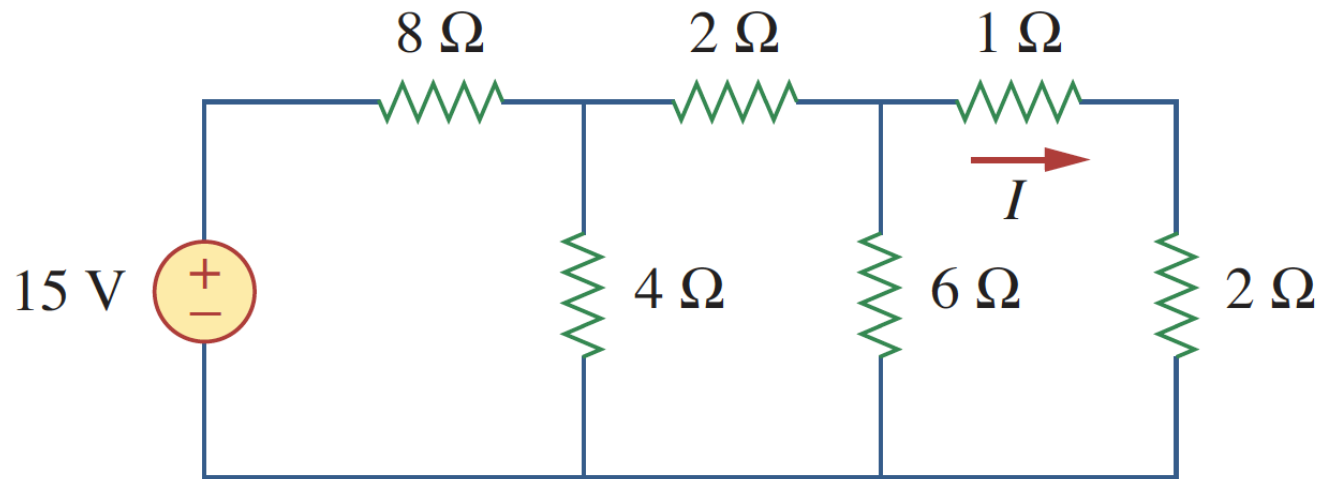


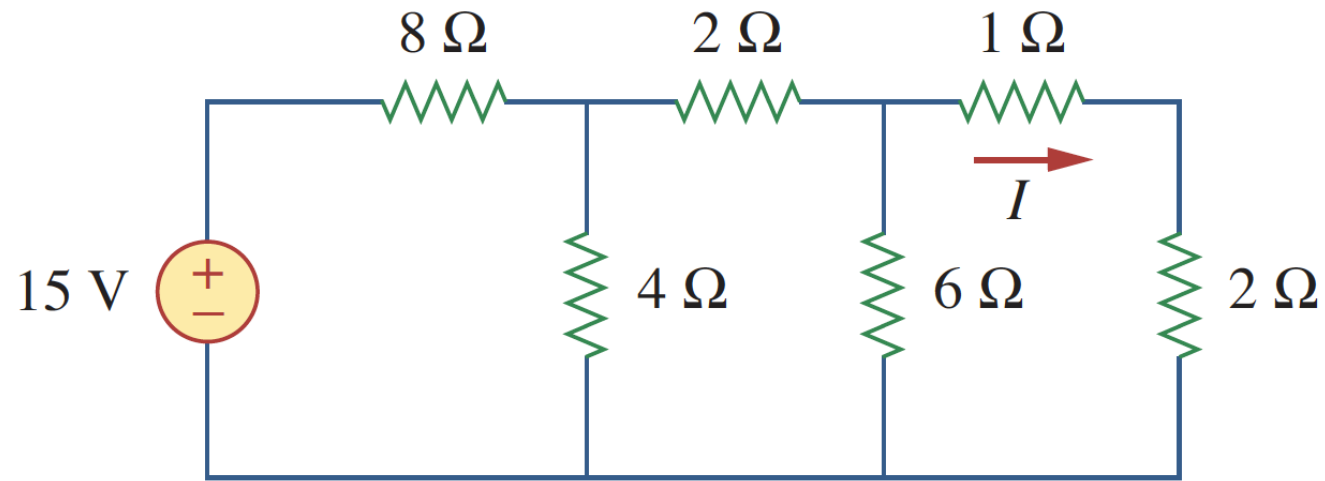
Example: find R_{eq} and i_o



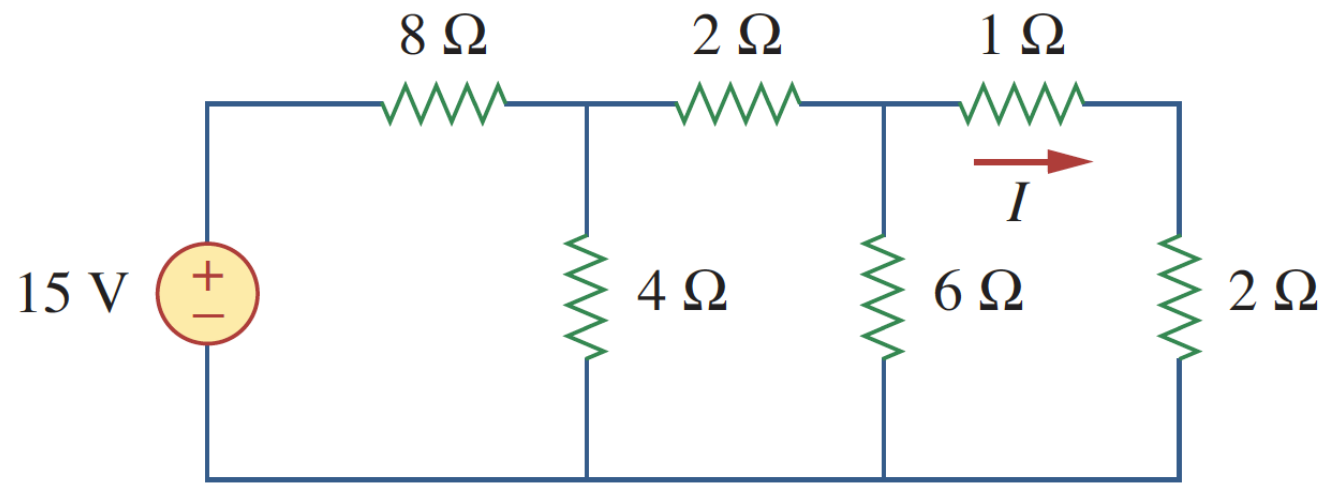
Circuit Analysis

- Sometimes we can do a full analysis using just series/parallel combining and voltage/current division
- Example: find I (next slide)





- Work flow:
 - Right to left

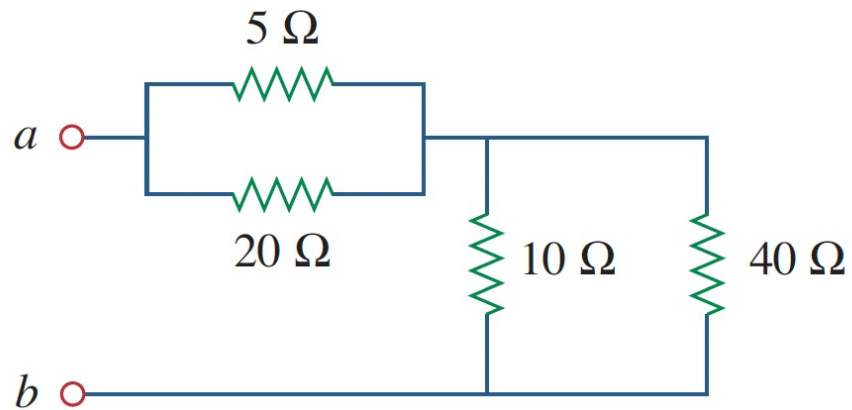


0.5 A

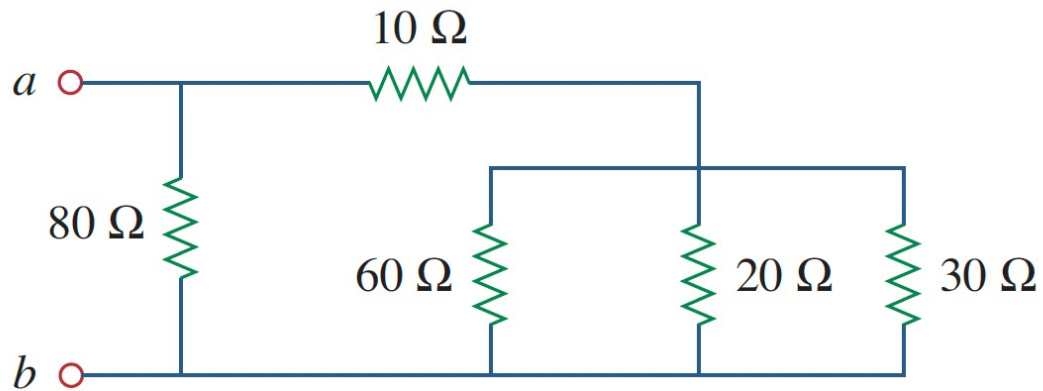
- Work flow:
 - Left to right

12 Ω , 16 Ω

Practice problems: find the equivalent resistances



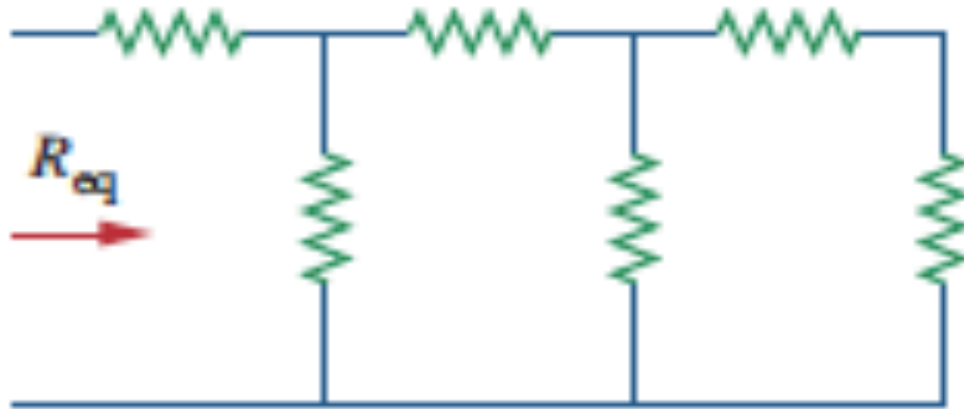
(a)



(b)

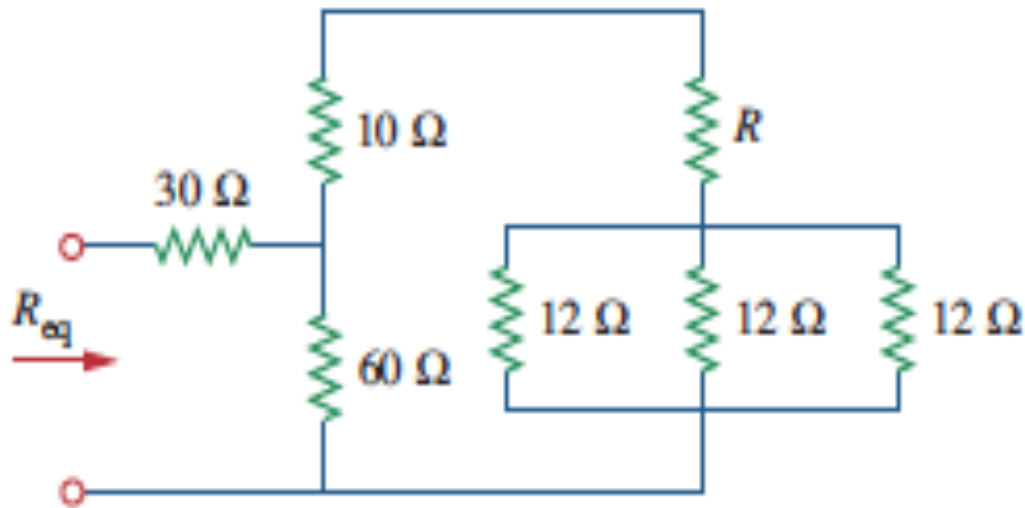
13 Ω

Practice problem: find R_{eq} if all resistors are 8 Ω



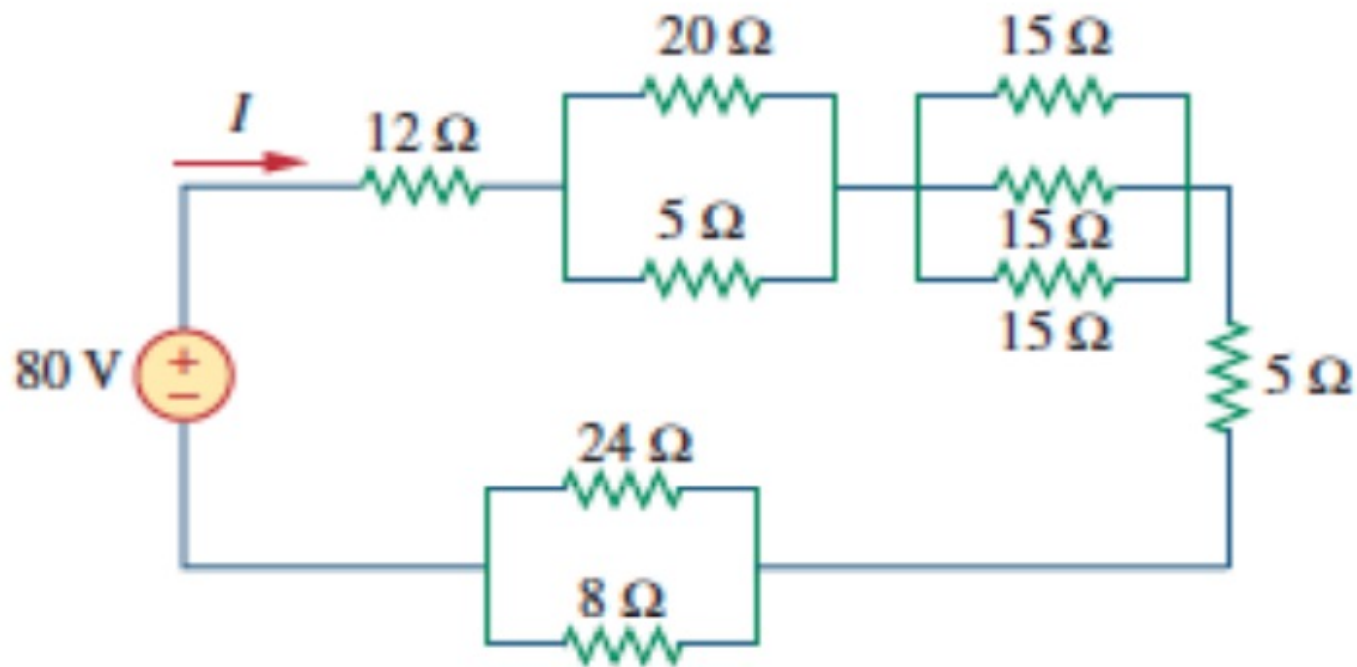
16 Ω

Practice problem: if $R_{eq} = 50 \Omega$, find R



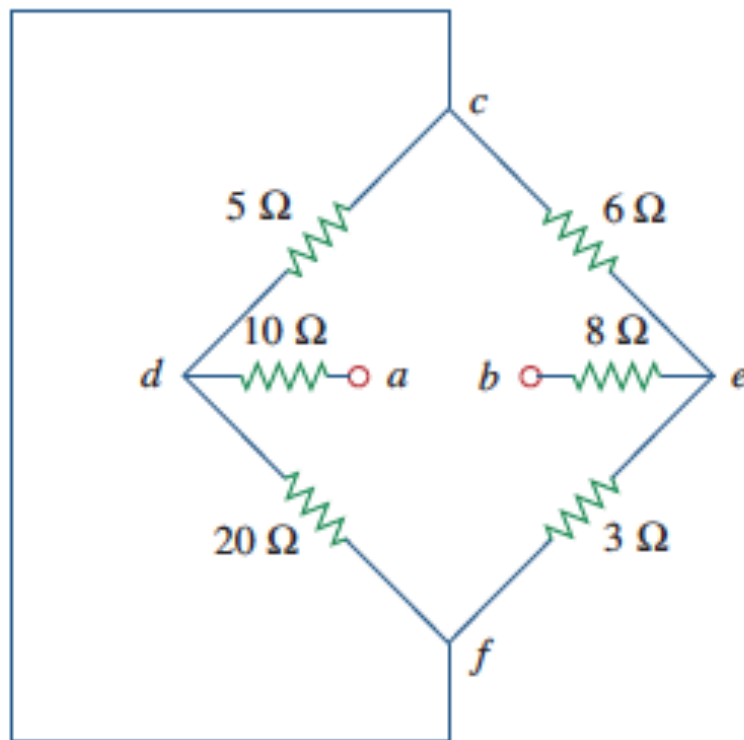
2.5 A

Practice problem: find I



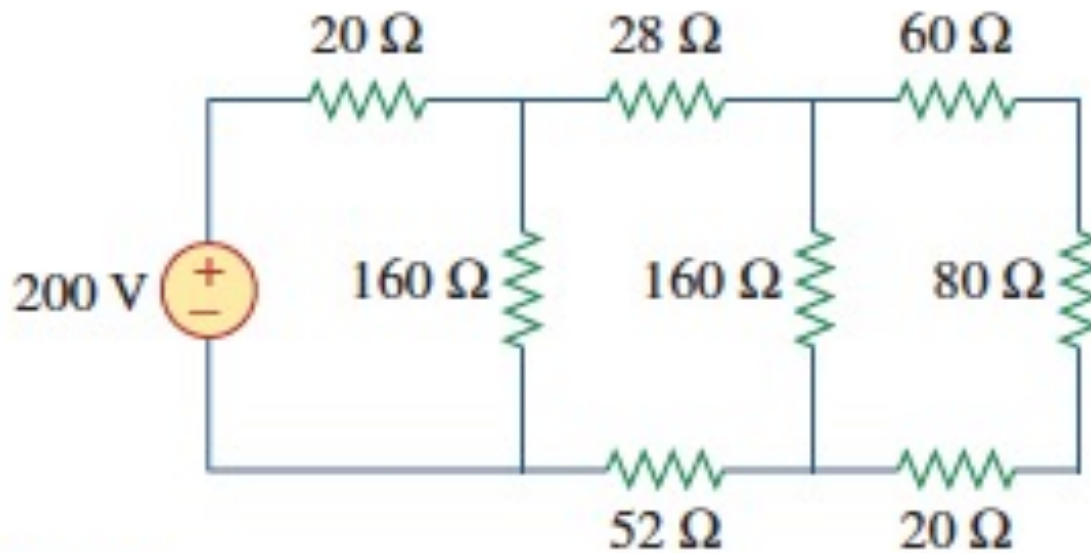
24 Ω

Practice problem: find the equivalent resistance at $a-b$



−400 W

Practice problem: find the source power



20 V

Practice problem: find v

