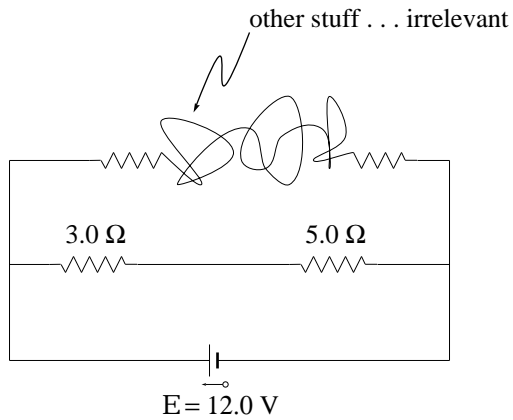


A circuit with five resistors



The same current flows through the 3.0 ohmer and the 5.0 ohmer , so the voltage drop across each is proportional to the resistance of each:

$$\frac{\Delta V_{5 \Omega}}{\Delta V_{3 \Omega}} = \frac{5.0}{3.0}.$$

But the total voltage drop is

$$\Delta V_{5 \Omega} + \Delta V_{3 \Omega} = 12.0 \text{ V}$$

so

$$\Delta V_{5 \Omega} = \frac{5.0}{5.0 + 3.0}(12.0 \text{ V}) = 7.5 \text{ V}.$$

Grading: 3 points for any reasonable startup; 7 points for answer.