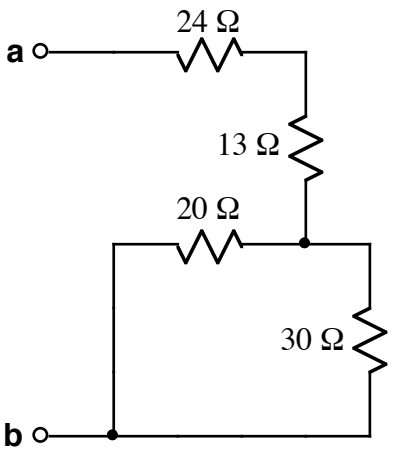
HOMEWORK #3 prob 1 solution

Ex:



Find the value of total resistance between terminals **a** and **b**.

Sol'n: The 20 Ω and 30 Ω resistors are in parallel:

$$20\Omega \,\|\, 30\Omega = 10\Omega \cdot 2 \,\|\, 3 = 10\Omega \cdot \frac{2 \cdot 3}{2+3} = 10\Omega \cdot \frac{6}{5} = 12\Omega$$

We replace the 20 Ω and 30 Ω resistors with a single 12 Ω resistor, leaving three resistors in series, whose values sum:

$$R_{\mathbf{ab}} = 24\Omega + 13\Omega + 12\Omega = 49\Omega$$