Ex:

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

SOL'N: a) The 20 Ω and 30 Ω resistors are in parallel:

\[ 20Ω \parallel 30Ω = \frac{20Ω \cdot 30Ω}{20Ω + 30Ω} = \frac{2 \cdot 3}{5} \cdot 10Ω = 12Ω \]

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

\[ R_{ab} = 24Ω + 13Ω + 12Ω = 49Ω \]