

Worksheet: Parallel Circuit Problems - Episode 904 Name _____

Remember that in a parallel circuit:

- the **current** in the branches of the circuit (is the same, adds up).
- the **voltage** drops across each branch (is the same, adds up to) the total voltage.
- to calculate total **resistance**, (add, use reciprocals).

<p>$R_{eq} = \frac{8\Omega}{24V}$ $I_T = \frac{3A}{2A}$ $V_1 = \frac{24V}{1A}$ $V_2 = \frac{24V}{2A}$ $I_1 = \frac{2A}{2A}$ $I_2 = \frac{1A}{2A}$</p>	<p>$R_{eq} = \frac{10\Omega}{40V}$ $I_T = \frac{4A}{2A}$ $V_T = \frac{40V}{2A}$ $V_1 = \frac{40V}{2A}$ $I_1 = \frac{2A}{2A}$ $I_2 = \frac{2A}{2A}$</p> <p><i>identical resistors same current</i></p>
<p>$R_1 = \frac{3\Omega}{6V}$ $R_2 = \frac{6\Omega}{6V}$ $R_{eq} = \frac{2\Omega}{2A}$ $I_1 = \frac{2A}{2A}$ $I_2 = \frac{1A}{2A}$ $I_T = \frac{3A}{2A}$</p>	<p>$R_{eq} = \frac{2\Omega}{40V}$ $I_T = \frac{20A}{2A}$ $V_1 = \frac{40V}{10A}$ $V_2 = \frac{40V}{2A}$ $V_3 = \frac{40V}{10A}$ $I_1 = \frac{8A}{2A}$ $I_2 = \frac{2A}{2A}$ $I_3 = \frac{10A}{10A}$</p>
<p>$V_1 = \frac{12V}{12V}$ $V_2 = \frac{12V}{12V}$ $I_T = \frac{3A}{1A}$ $I_1 = \frac{1A}{1A}$ $I_2 = \frac{2A}{1A}$ $R_2 = \frac{6\Omega}{1A}$ $R_{eq} = \frac{4\Omega}{1A}$</p>	<p>$V_1 = \frac{30V}{3A}$ $V_T = \frac{30V}{2A}$ $I_1 = \frac{3A}{3A}$ $I_2 = \frac{2A}{2A}$ $R_{eq} = \frac{6\Omega}{5A}$ $I_T = \frac{5A}{5A}$</p>