

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).

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$R_{eq} = 8\Omega$ $I_T = 3A$ $V_1 = 24V$
 $V_2 = 24V$ $I_1 = 2A$ $I_2 = 1A$

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$R_{eq} = 10\Omega$ $I_T = 4A$ $V_T = 40V$
 $V_1 = 40V$ $I_1 = 2A$ $I_2 = 2A$

identical resistors = same current

$V_1 = 6V$ $V_2 = 6V$
 $R_1 = 3\Omega$ $R_2 = 6\Omega$ $R_{eq} = 2\Omega$
 $I_1 = 2A$ $I_2 = 1A$ $I_T = 3A$

$R_{eq} = 2\Omega$ $I_T = 20A$
 $V_1 = 40V$ $V_2 = 40V$ $V_3 = 40V$
 $I_1 = 8A$ $I_2 = 2A$ $I_3 = 10A$

$V_1 = 12V$ $V_2 = 12V$
 $I_T = 3A$ $I_1 = 1A$ $I_2 = 2A$
 $R_2 = 6\Omega$ $R_{eq} = 4\Omega$

$V_1 = 30V$ $V_T = 30V$
 $I_1 = 3A$ $I_2 = 2A$
 $R_{eq} = 6\Omega$ $I_T = 5A$