

HOW TO SOLVE CIRCUITS

1. Identify resistors connected purely in series or parallel.
2. Find total resistance of each such pure connection. Replace each pure connection with one resistor which has resistance equal calculated total resistance.
3. Find total resistance of the circuit.
4. Find total current dividing total emf (voltage supplied) by total resistance.
5. Find voltage drop across each resistor connected in series in modified circuit using Ohm's law.
6. Find current through each resistor connected in parallel in modified circuit using Ohm's law.
7. Replace resistors which represent pure groups of resistors by original resistors and find voltages across and currents through each resistor using Ohm's law.

HOW TO SOLVE VOLTAGE DIVIDERS.

1. Identify ratio of the resistors making voltage divider.
2. Divide voltage supplied in the same ratio $\frac{R_1}{R_2} = \frac{V_1}{V_2}$ or use voltage divider formula $V_1 = \frac{R_1}{R_1+R_2} V_{in}$
3. If you know how voltage is shared, use ratio formula to find unknown resistance.