Formula Sheet

Electric current: $I = \dfrac{dQ}{dt}$

Ohm's law $R = \dfrac{V}{I}$

Resistance and resistivity: $R = \rho \dfrac{L}{A}$

Electric power: $P = I \cdot V$

N resistors in series: $R_{eq} = R_1 + R_2 + \cdots + R_N$

N resistors in parallel: $\dfrac{1}{R_{eq}} = \dfrac{1}{R_1} + \dfrac{1}{R_2} + \cdots + \dfrac{1}{R_N}$

Kirchhoff's current law (KCL): $\sum I_{in} = \sum I_{out}$ at a junction

Kirchhoff's voltage law (KVL): $\sum \Delta V = 0$ around a closed loop