Review of Chapter 7

Conductivity

Ohm's Law $\vec{J} = \sigma \vec{E}$

Resistance, Power

Electromotive Force

Motional EMF

Flux Rule

Faraday's Law

Lenz' Law

Induced Electric Field

Inductance

Self Inductance

Mutual Inductance

Magnetic Energy $\frac{1}{2} L I^2$

Voltage Across Inductor

Magnetic Energy Density

$$\frac{1}{2\mu_0} B^2 \quad \text{or} \quad \frac{1}{2} \vec{A} \cdot \vec{J}$$

Displacement Current

$\Rightarrow$ Resulting Magnetic Field

Maxwell's Eqns in Matter

Is something a valid electrodynamic field?

Boundary Conditions

Polarization Current $J_P = \frac{\partial \vec{P}}{\partial t}$