

Electricity and Magnetism

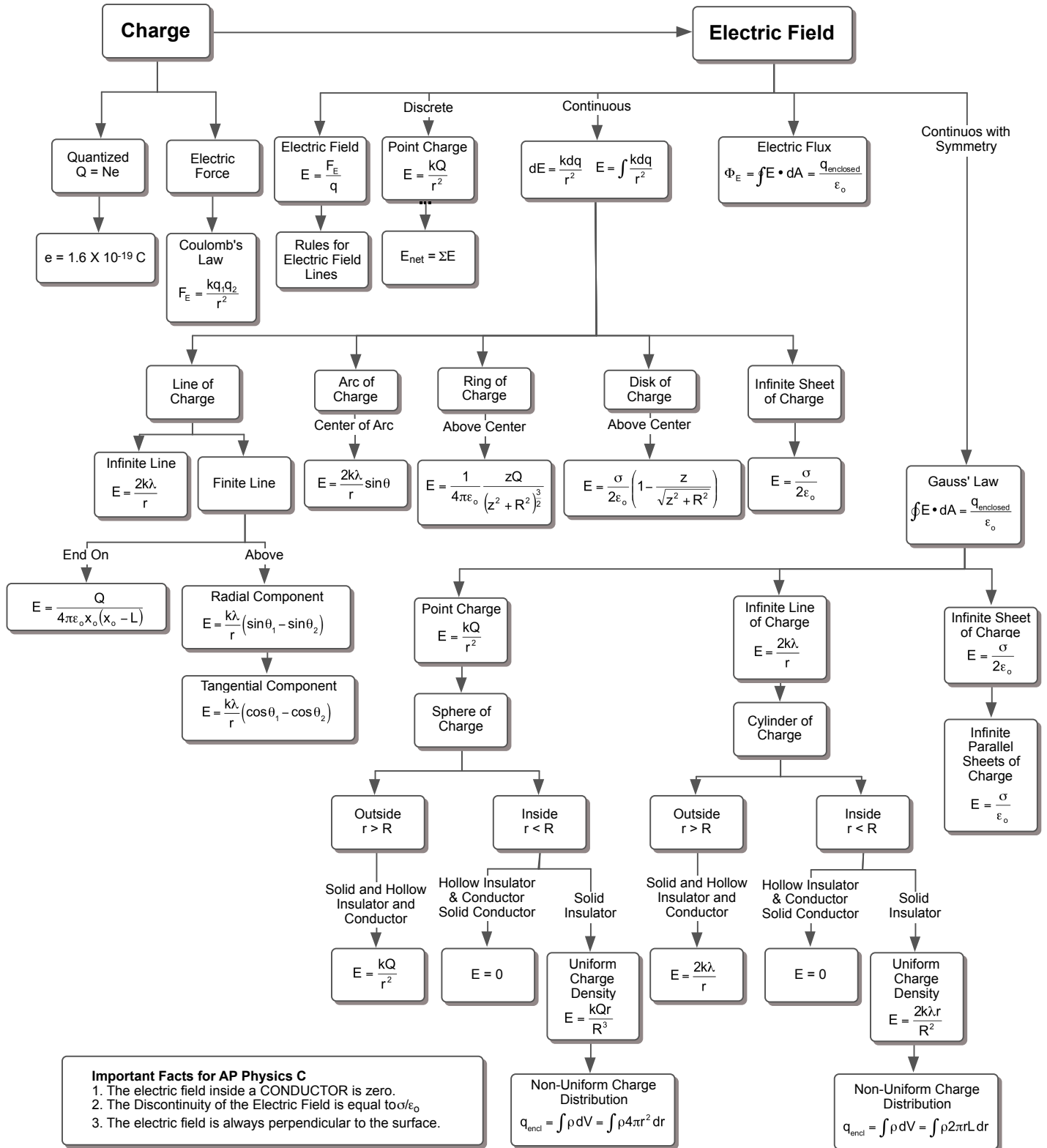
Enduring Understanding - The distribution of charge determines the strength and form of the electric field.

Essential Questions

1. Does quantized charge mean quantized electric field?
2. What are the relationships between charge, electric field and electrostatic force?
3. How important is symmetry in the derivation of an electric field?
4. How does the electric flux change as the area changes?



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Important Facts for AP Physics C

1. The electric field inside a CONDUCTOR is zero.
2. The Discontinuity of the Electric Field is equal to σ/ϵ_0 .
3. The electric field is always perpendicular to the surface.

Non-Uniform Charge Distribution

$$q_{\text{encl}} = \int \rho dV = \int \rho 4\pi r^2 dr$$

Non-Uniform Charge Distribution

$$q_{\text{encl}} = \int \rho dV = \int \rho 2\pi r L dr$$