Electric Field and charges

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1. Coulomb's Law and Electrostatic Force

- **1.1**: Force between two point charges.
- **1.2**: Use of Coulomb's law to find distance and force.
- **1.6**: Net force on a charge at the center of a square due to charges at corners.
- **1.12**: Electrostatic repulsion between two spheres with given charges.
- **1.13**: Trajectory of charges in an electric field (sign and acceleration).

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2. Basic Properties of Charge (Quantisation, Conservation, Additivity)

- **1.3**: Dimensionless ratio of electric and gravitational force.
- **1.4**: Meaning and significance of quantisation of charge.
- **1.5**: Conservation of charge in rubbing process.
- **1.11**: Estimating number of electrons transferred and mass transfer.

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3. Electric Field and Field Lines

- **1.7**: Properties of electric field lines.
- **1.8**: Electric field at midpoint between two charges and force on a test charge.
- **1.14**: Flux through a surface in a uniform field.
- **1.15**: Net flux through a cube in uniform field.

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4. Electric Dipole

- **1.9**: Dipole moment and total charge from coordinates.
- **1.10**: Torque on dipole in electric field.

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5. Gauss's Law and Its Applications

- **1.16**: Determining charge from electric flux.
- **1.17**: Flux through one face of a cube enclosing a charge.
- **1.18**: Electric flux through a cubic Gaussian surface.
- **1.19**: Effect of changing radius of Gaussian surface.

- **1.20**: Net charge on a conducting sphere from electric field.
- **1.21**: Charge and flux from surface charge density.
- **1.22**: Linear charge density from electric field.
- **1.23**: Electric field in and around parallel charged plates.