

PHY 202 Test 1 Preparation

Spring semester, 2004

The purpose of this assignment is to help you prepare for the Test 1. Fill in the appropriate laws or definitions; all variables must be defined somewhere in review sheet; draw a picture when appropriate (\clubsuit). Bring the completed assignment with you for use during the exam, and hand it in with your exam: it will count as part of your exam grade. Do not include any “extra” information on this assignment.

- Vector definitions
 - Cross product (for combinations of \hat{i} , \hat{j} , and \hat{k}).
 - electric flux $\Phi_{\mathbf{E}}$ \clubsuit
- Force of \mathbf{E} field on charged particles
- electric dipole moment
 - definition \clubsuit
 - torque
 - energy

Relation between V and \mathbf{E} :

- integral form \clubsuit
- derivative form

Gauß' law. \clubsuit

Superposition principle:

Symmetries of \mathbf{E} and V :

Charges produce electric fields

- Coulomb's law (comes from Gauß' law) ♣

rule for direction of \mathbf{F} :

- \mathbf{E} of point charge (from Coulomb's law) ♣
- \mathbf{E} at the surface of a conductor
- \mathbf{E} in the interior of a conductor