

PHYSICS 1026-2012 CLASS 6 MONDAY 1-30-12 SUMMARY

Quantitative relations between V & \vec{E}

$\rightarrow dV = -\vec{E} \cdot d\vec{\ell}$

For a path parallel to \vec{E} $|\vec{E}| = \frac{dV}{d\ell}$
 $\Delta V_{AB} \equiv V_B - V_A = -\int_A^B \vec{E} \cdot d\vec{\ell}$

To evaluate this integral, you must first
1) Choose a path from A to B
2) Deal with the dot product

Voltage due to a point charge

$V \equiv 0$ at $r \rightarrow \infty \rightarrow$

$V_{\text{point charge}} = \frac{kq}{r}$