

From 203

$$\vec{F} = m \vec{a}$$

$$KE = \frac{1}{2} m v^2 = \frac{p^2}{2m}$$

$$E = KE + U$$

$$m \vec{a}_{ucm} = \frac{m v^2}{R}$$

$$W_{tot} = KE_f - KE_i$$

$$E_i = E_f$$

$$\vec{p} = m \vec{v}$$

$$\vec{p}_i = \vec{p}_f$$

$$A_{sph-surf} = 4\pi r^2$$

$$A_{circ} = \pi r^2$$

$$V_{sph} = \frac{4}{3} \pi r^3$$

$$F = k \frac{q_1 q_2}{r^2} = \frac{q_1 q_2}{4\pi \epsilon_0 r^2} \quad k = 8.99 (10)^9 \left[ \frac{Nm^2}{C^2} \right]$$

$$k = \frac{1}{4\pi \epsilon_0}$$

$$E = \frac{F}{q} \quad E = k \frac{q}{r^2} = \frac{q}{4\pi \epsilon_0 r^2}$$

$$\epsilon_0 = 8.85 (10)^{-12} \left[ \frac{C^2}{Nm^2} \right]$$

$$\Phi = \sum_{surf} E_{\perp} \Delta A = \frac{q_{inside}}{\epsilon_0}$$

$$V = U / q$$

$$V = k \frac{q}{r} = \frac{1}{4\pi \epsilon_0} \frac{q}{r}$$

$$Q = VC \quad V = Ed \quad C = \kappa \frac{A\epsilon_0}{d} \quad \sigma = Q/A \quad E = \frac{\sigma}{\epsilon_0}$$

$$V = IR \quad \sum_{junc} I_j = 0 \quad \sum_{loop} V_j = 0$$

$$\frac{QV}{2} = \frac{CV^2}{2} = \frac{Q^2}{2C}$$

$$R_{eff} = R_1 + R_2 \quad \frac{1}{C_{eff}} = \frac{1}{C_1} + \frac{1}{C_2}$$

$$P = IV = I^2 R = V^2 / R$$

$$\frac{1}{R_{eff}} = \frac{1}{R_1} + \frac{1}{R_2}$$

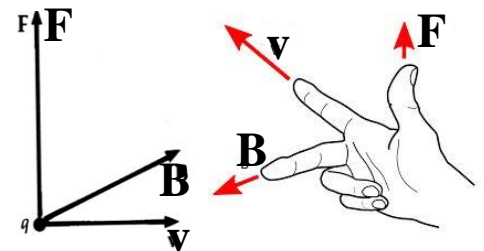
$$C_{eff} = C_1 + C_2$$

$$\sim e^{-t/\tau}$$

$$\tau = RC$$

$$\tau = L/R$$

$$F = q v B_{\perp} = q v_{\perp} B = q v B \sin(\theta)$$



$$F = IL B_{\perp} = I_{\perp} L B = IL B \sin(\theta)$$

