$$\%_{\text{error}} = \frac{|\text{Value}_{\text{literature}} - \text{Value}_{\text{theoretical}}|}{\text{Value}_{\text{literature}}} \times 100$$

$$\left(\frac{e}{m}\right)_{\text{literature}} = 1.76 \times 10^{11}\,\text{C/kg}$$

$$B = \frac{\mu_0 n R^2 I}{(R^2 + a^2)^{3/2}} \qquad \frac{e}{m} = \frac{2V}{r^2 B^2} \qquad F = e\,v\,B \qquad F_r = \frac{mv^2}{r}$$

$$h_{\text{literature}} = 6.62607 \times 10^{-34}\,\text{m}^2\text{kg/s}$$

$$KE_{e^-} = hf - W = \frac{1}{2}mv^2 \qquad eV = \frac{1}{2}mv_{\text{max}}^2 = KE_{\text{max}} \qquad \frac{h}{e} = \frac{V_1 - V_2}{f_1 - f_2}$$

$$\frac{IA}{hf} = \frac{i}{e}$$

$$\theta = \tan^{-1}\frac{a}{D} \qquad n\lambda = 2d\sin\theta \qquad 2sin\theta = \frac{R}{L} \qquad n\lambda = \frac{Rd}{L}$$

$$\frac{1}{\lambda_{\text{shortest}}} = \frac{1}{n_f^2}R_\infty \qquad \frac{1}{\lambda_{\text{longest}}} = R_\infty\left[\frac{1}{n_f^2} - \frac{1}{(n_f+1)^2}\right]$$

$$\lambda_{\text{th}} = \frac{h}{mv} = \frac{h}{\sqrt{2m_e eV}} = 12.26 \times 10^{-10} \times \frac{1}{\sqrt{V}} \qquad \lambda_{\text{exp}} = \frac{r_1 d_2 + r_2 d_1}{2L}$$