Équations à connaître

$$v = \frac{c}{n}$$

$$\lambda_n = \frac{\lambda_0}{n}$$

$$\theta = \theta'$$

$$n_1 \sin\theta_1 = n_2 \sin\theta_2$$

$$\frac{1}{f} = \frac{1}{p} + \frac{1}{q}$$

$$N = \frac{r}{\lambda_n} = \frac{rn}{\lambda}$$

$$\Delta N = N_2 - N_1$$

$$\Delta r = r_2 - r_1$$

$$N = \frac{rn}{\lambda} + N_{réfl} = \begin{cases} \frac{rn}{\lambda} + \frac{1}{2} & \text{(réfl. dure)} \\ \frac{rn}{\lambda} + 0 & \text{(réfl. molle)} \end{cases}$$

$$a \sin\theta = p\lambda$$

$$d = \frac{1}{n}$$

Constantes fournies

$$\varepsilon_0 = 8{,}854 \times 10^{-12}\ \frac{\text{C}^2}{\text{N}\cdot\text{m}^2}$$

$$\mu_0 = 4\pi \times 10^{-7}\ \frac{\text{T}\cdot\text{m}}{\text{A}}$$

Équations fournies

$$I = \frac{P}{A}$$

$$I = \frac{P}{4\pi r^2}$$

$$I = I_0 \cos^2\theta$$

$$f = \frac{R}{2}$$

$$m = \frac{y_I}{y_O} = -\frac{q}{p}$$

$$V = \frac{1}{f}$$

$$N_2 - N_1 = m$$

$$\Delta r = d \sin\theta = m\lambda$$

$$\Delta\Phi = 2m\pi$$

$$\frac{\Delta\Phi}{2\pi\ \text{rad}} = \frac{\Delta r}{\lambda}$$

$$I = 4I_0 \cos^2\left(\frac{\Delta\Phi}{2}\right)$$

$$I = I_{max}\left(\frac{\sin\alpha}{\alpha}\right)^2$$

$$\alpha = \frac{\Delta\Phi}{2} = \frac{\pi a \sin\theta}{\lambda}$$

$$\sin\theta_1 = \frac{1{,}22\lambda}{D}$$

Équations optionnelles ou non essentielles

$$I = \frac{I_0}{2}$$

$$\sin\theta_c = \frac{n_{ém}}{n_{inc}}$$