

11-1)

$$t := 0.0114 \text{ cm} \quad M_{\max} := 523$$

$$\lambda := \frac{2 \cdot t \cdot 10^{-2}}{M_{\max}} \quad \lambda = 4.359 \times 10^{-7} \text{ m}$$

$$435.9 \text{ nm}$$

11-3)

$$\lambda := 589 \text{ nm} \quad \Delta m := 35 \quad n := 1.434$$

$$L := \lambda \cdot \frac{\Delta m}{2 \cdot (n - 1)}$$

$$L = 2.375 \times 10^4 \text{ nm}$$

11-10)

$$\lambda := 6563 \text{ A}$$

$$\Delta \lambda := 0.136 \text{ A}$$

$$r := 0.99$$

$$R := \frac{\lambda}{\Delta \lambda} \quad R = 4.826 \times 10^4$$

$$F := \frac{4 \cdot r^2}{(1 - r^2)^2} \quad F = 9.9 \times 10^3$$

$$m := \frac{2 \cdot \lambda}{\Delta \lambda \cdot \pi \cdot \sqrt{F}} \quad m = 308.767$$
$$t := \frac{m \cdot \lambda \cdot 10^{-10}}{2} \quad t = 1.013 \times 10^{-4} \text{ m}$$

11-12)

$$\lambda := 546 \quad \text{nm}$$

$$t := 2 \quad \text{cm}$$

$$R := 0.90 \quad n := 4.5$$

$$M_{\text{max}} := \frac{2 \cdot t \cdot 10^{-2}}{\lambda \cdot 10^{-9}} \quad M_{\text{max}} = 7.326 \times 10^4$$

$$F := \frac{4 \cdot R}{(1 - R)^2} \quad F = 360$$

$$T_{\text{max}} := 1$$

$$T_{\text{min}} := \frac{1}{1 + F}$$

$$\frac{T_{\text{max}}}{T_{\text{min}}} = 361$$

$$\Delta\lambda := \frac{2 \cdot \lambda}{M_{\text{max}} \cdot \pi \cdot \sqrt{F}} \quad \Delta\lambda = 2.501 \times 10^{-4}$$

$$R := \frac{\lambda}{\Delta\lambda}$$

$$R = 2.183 \times 10^6$$

$$\lambda := 490 \cdot 10^{-9} \text{ m}$$

$$\Delta\lambda_{\text{FSR}} := 0.0055 \cdot 10^{-9} \text{ m}$$

$$t := \frac{\lambda^2}{2 \cdot \Delta\lambda_{\text{FSR}}} \quad t = 0.022 \text{ m}$$