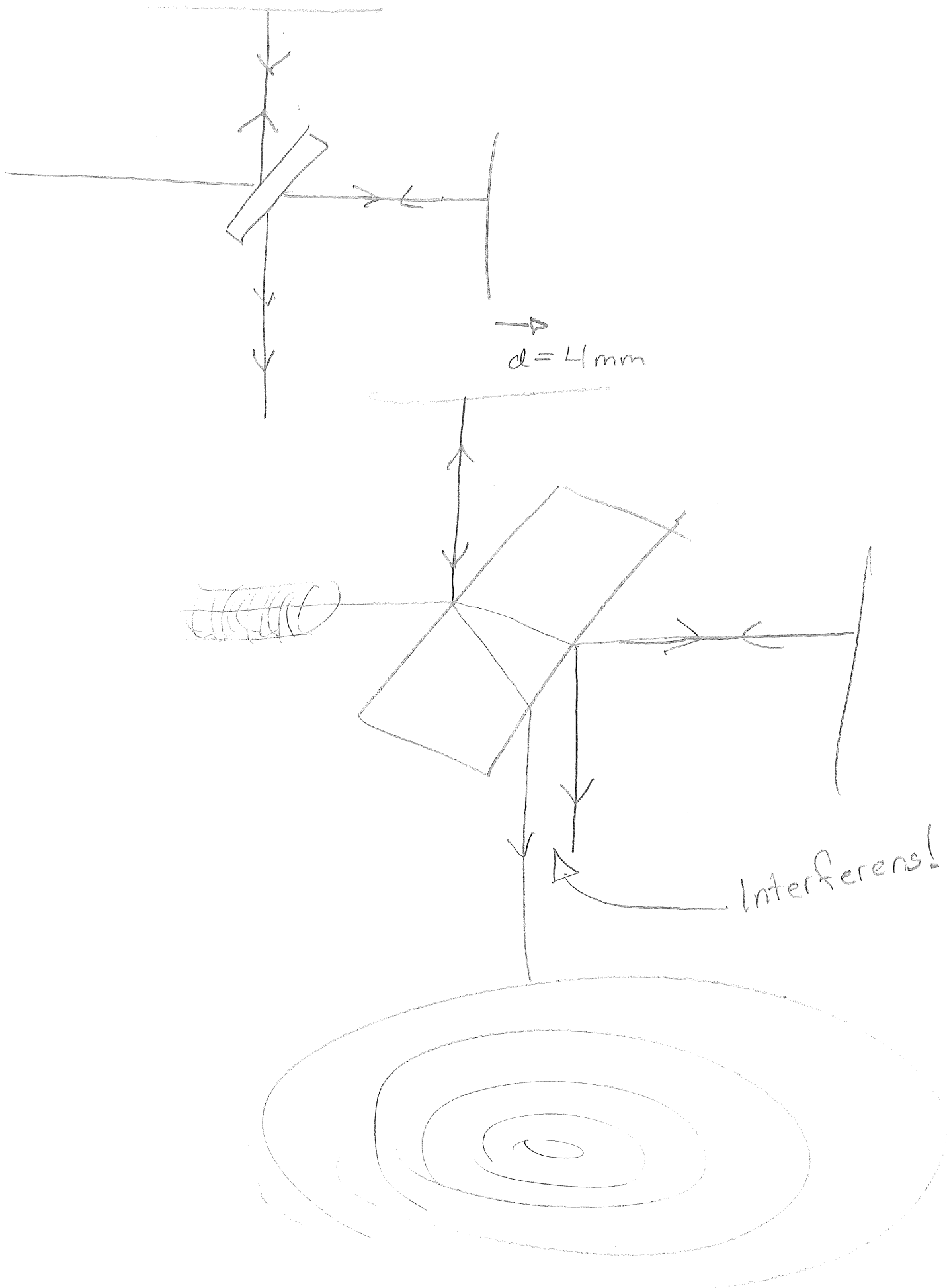


8.1

$$\lambda = 589 \text{ nm}$$



8.1

$$a) p\lambda = 2d(1 - \cos \theta)$$

$$p=1, \lambda = 589 \text{ nm}, d = 4 \text{ mm}$$

$$\Rightarrow \boxed{\theta = 0,7^\circ}$$

$$b) \Delta m = \frac{2\Delta d}{\lambda}$$

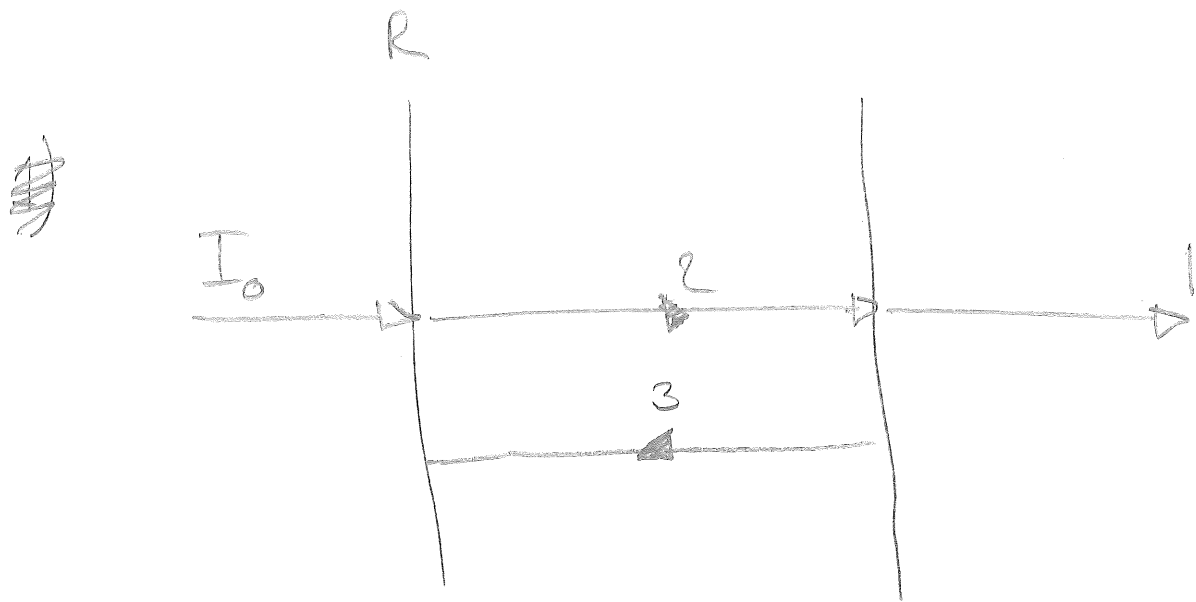
$$\lambda = 589 \text{ nm} \quad \Delta m = 155, \quad \Delta d = 100 \text{ mm} (n-1)$$

$$\boxed{n = 1,000456} \text{ om luft hade}$$

$$\text{luft } n = 1,000000.$$

8.4

$$R = 0,95 \quad \left(r = \sqrt{0,95} \right)$$



#

$$1) \quad T = \frac{1}{1 + F \sin^2 \theta} \quad , \quad F = \frac{4R}{(1-R)^2}$$

$$T_{\max} = I_0 \quad , \quad I_{\min} = 0,000657$$

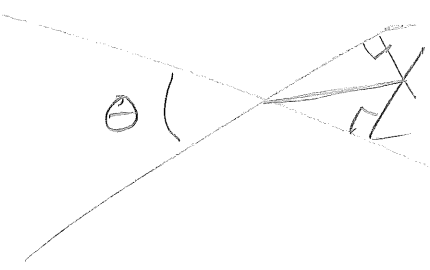
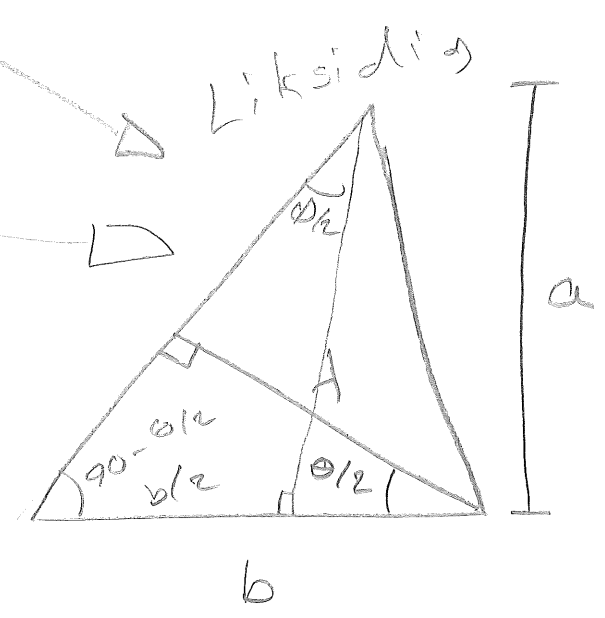
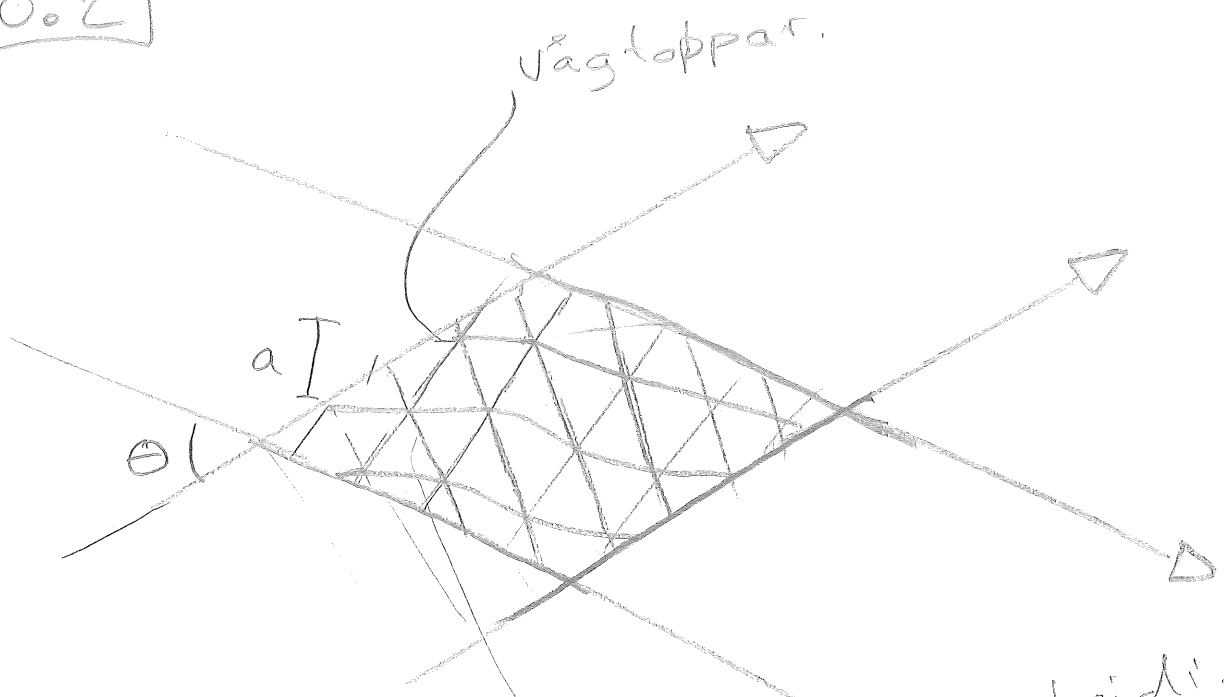
$$2) \quad \text{1 sur } 5\% \text{ ou } 2$$

$$I = 20 I_0 \quad , \quad I = 0,013$$

$$3) \quad \text{I} = 20 I_0 - I_0 = 19 I_0$$

$$I = I_0 (0,013 - 0,000657) = \boxed{0,0125 I_0}$$

8.2

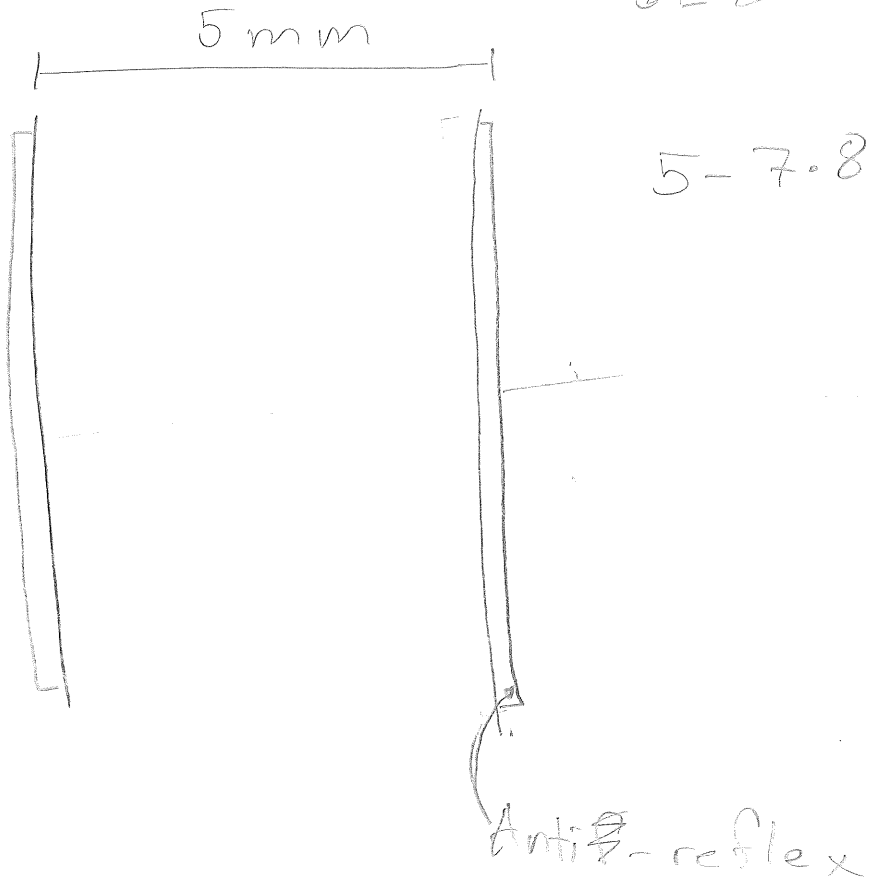


$$\begin{cases} b = \frac{\lambda}{\cos(\theta/2)} \\ \tan(\theta/2) = \frac{b}{2a} \end{cases} \Rightarrow \boxed{a = \frac{\lambda}{2 \sin(\theta/2)}}$$

8.3

R = 0,93

~~Anti-reflex~~



a) ??

b) $F = \frac{4R}{1-R^2} = 43$

$\Delta\lambda_{min} = \frac{\lambda}{mF} = \frac{\lambda}{\frac{2d}{\lambda} F} = \frac{\lambda^2}{2dF} = 0,83 \mu m$

c) ~~2d cos θ = mλ~~

d ökar $\rightarrow \theta$ minskar.

d) $\begin{cases} 2d_1 \cos \theta = m\lambda \\ 2d_2 \cos \theta = (m+1)\lambda \end{cases} \Rightarrow d_2 = d_1 + \frac{\lambda}{2(\cos \theta)}$

ökni $\frac{\lambda}{2} = 0,3 \mu m$