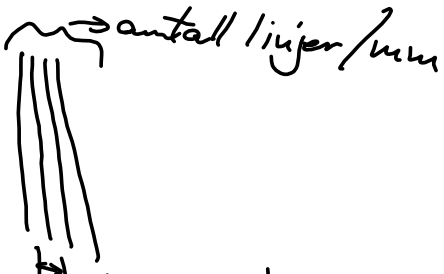
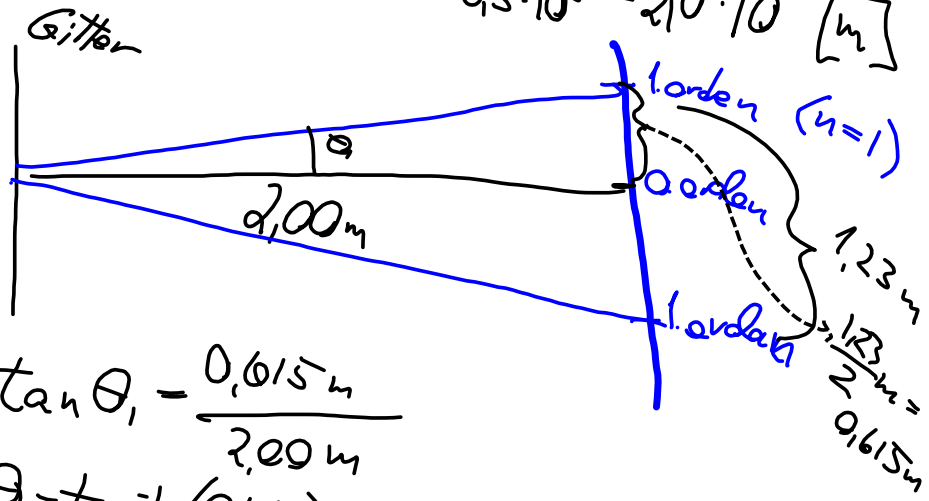
9.22



$$d = \frac{1}{500\left[\frac{1}{mm}\right]} = \frac{[mm]}{500} = \frac{10^{-3}[m]}{9{,}5\cdot 10^{3}} = 2{,}0\cdot 10^{-6}[m]$$



$$\tan\theta_1 = \frac{0{,}615\ m}{2{,}00\ m}$$

$$\theta_1 = \tan^{-1}\left(\frac{0{,}615}{2{,}00}\right) = 17{,}09^\circ$$

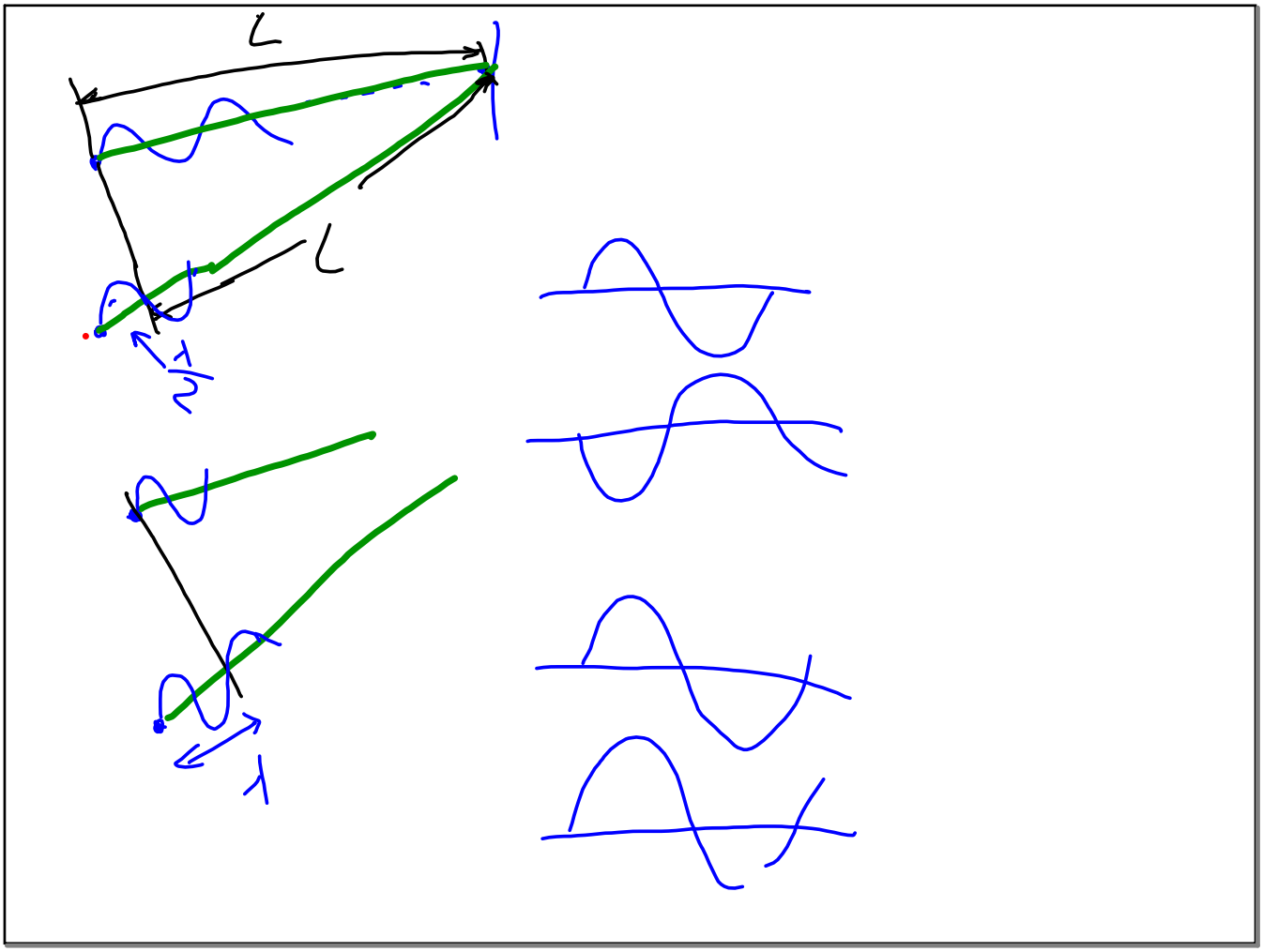
Interferensformelen: $d\cdot\sin\theta_n = n\cdot\lambda$

$n = 1$ (1. orden)

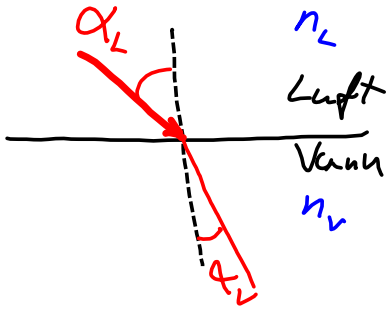
$$\lambda = d\cdot\sin\theta_1 = 2{,}0\cdot 10^{-6}\sin 17{,}09^\circ$$

$$= 0{,}588\cdot 10^{-6}[m] = 0{,}588[\mu m]$$

$$= 588\cdot 10^{-9}[m] = 588[nm]$$


L
L
1/2
1

8.311



$n_L \cdot \sin\alpha_L = n_v \cdot \sin\alpha_v$

$n_v = n_L \cdot \frac{\sin\alpha_L}{\sin\alpha_v}$

$n_L = 1{,}00$

$n_{v1} = \frac{\sin\alpha_L}{\sin\alpha_v} = \frac{\sin 10{,}0°}{\sin 7{,}8°} = 1{,}2795 - 1{,}307 =$

$n_{v2} = \frac{\sin 20{,}0°}{\sin 15{,}5°} = 1{,}2798 - 1{,}307 = -0{,}$

$n_{v3} = \frac{\sin 30{,}0°}{\sin 22{,}5°} = 1{,}3065 - 1{,}307 =$

$n_{v4} = \frac{\sin 40{,}0°}{\sin 29{,}0°} = 1{,}3258 - 1{,}307 =$

$n_{v5} = \frac{\sin 50{,}0°}{\sin 35{,}0°} = 1{,}3355 - 1{,}307 =$

$n_{v6} = \frac{\sin 60{,}9°}{\sin 42{,}5°} = 1{,}3334 - 1{,}307 =$

$n_{v7} = \frac{\sin 70{,}0°}{\sin 45{,}5°} = 1{,}3174 - 1{,}307 =$

$n_{v8} = \frac{\sin 80{,}0°}{\sin 50{,}0°} = 1{,}2855 - 1{,}307 =$

Finner middelverdien $\frac{\sum_{i=1}^{8} n_{vi}}{8} = 1{,}307$

Maks avvik

↳ Antall desimaler i usikkerhet

$n_v \pm X = 1{,}3 \pm 0{,}$

Kap 8 Lys

Refleksjon, total refleksjon ..

Snell's brytningslov

Kap 9 Bølger

T

, f, λ

Interferens