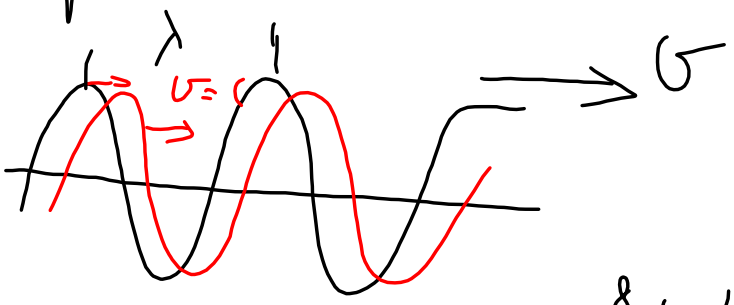
ν [Hz] → $\left[\frac{1}{s}\right]$



$v = c = 3{,}00 \cdot 10^8$ m/s

↑ Lyshastigheten

λ [m] $= \frac{c}{\nu} \frac{[m/s]}{[1/s]} = \frac{c}{\nu}$ [m]

↑ Bølgelengde

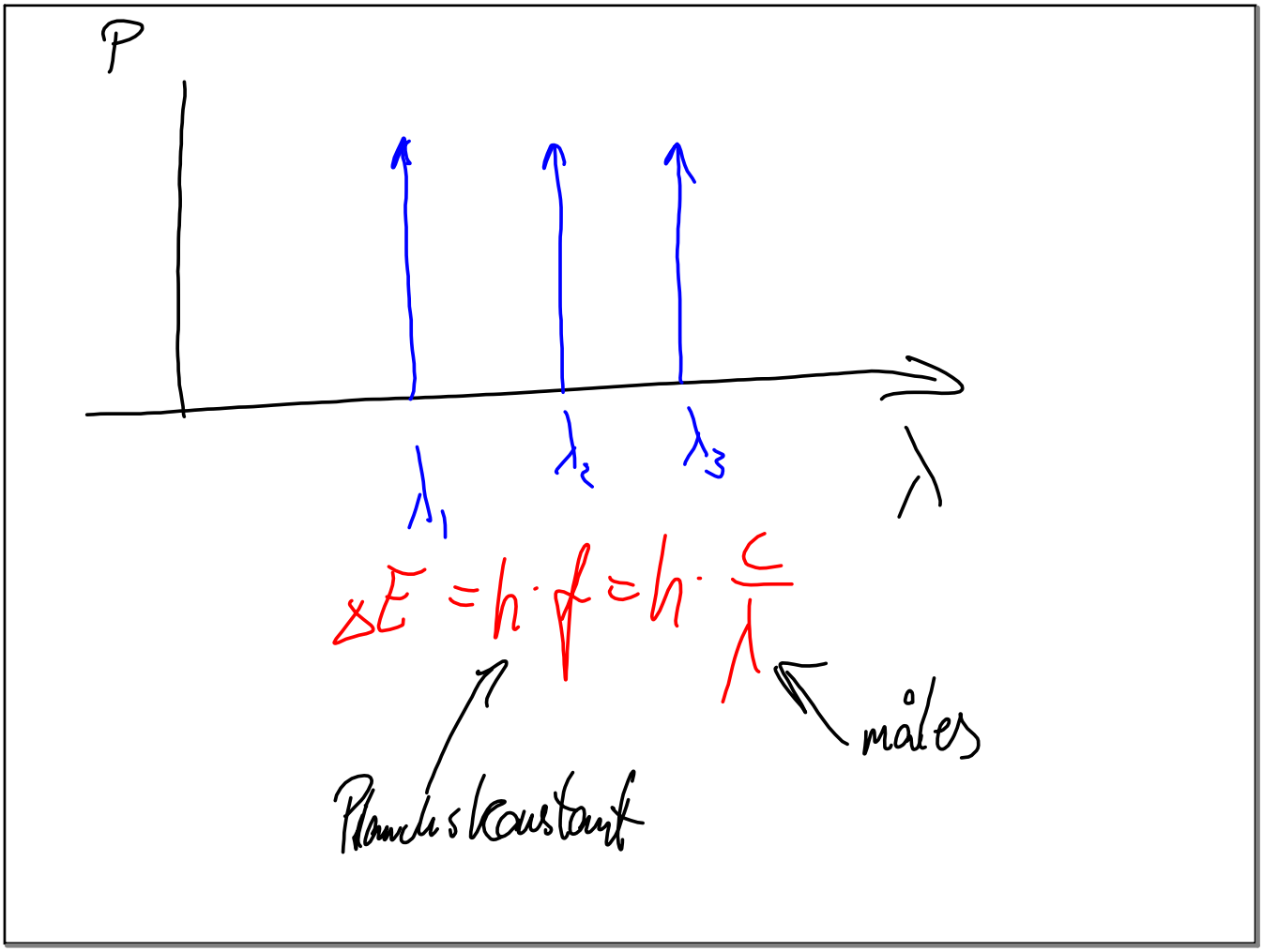
Eks: $\lambda = 500$ nm $= 500 \cdot 10^{-9}$ m $= 0{,}5 \cdot 10^{-6}$ m

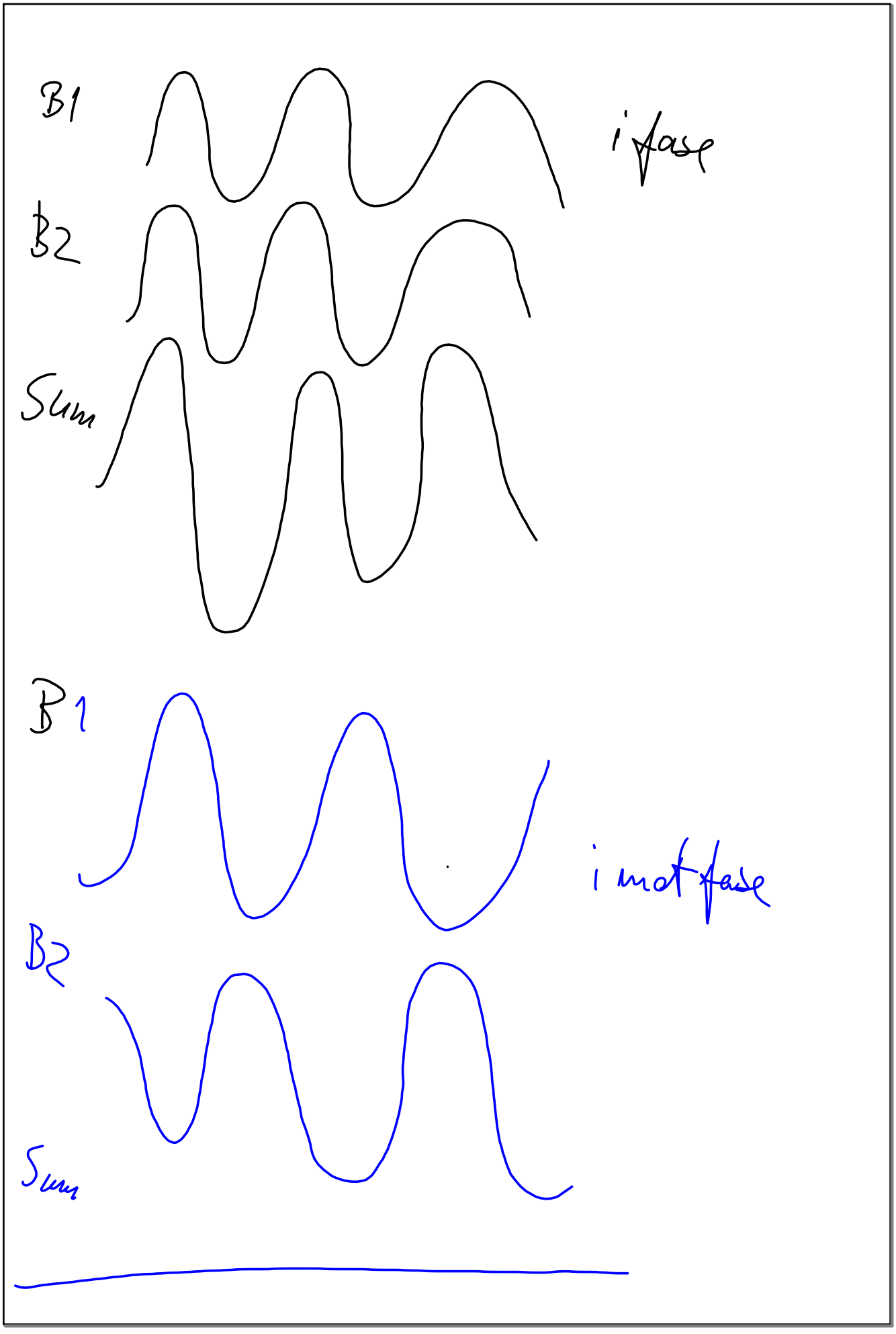
$\nu = \frac{c}{\lambda} = \frac{3{,}00 \cdot 10^8 [m/s]}{0{,}5 \cdot 10^{-6} [m]}$

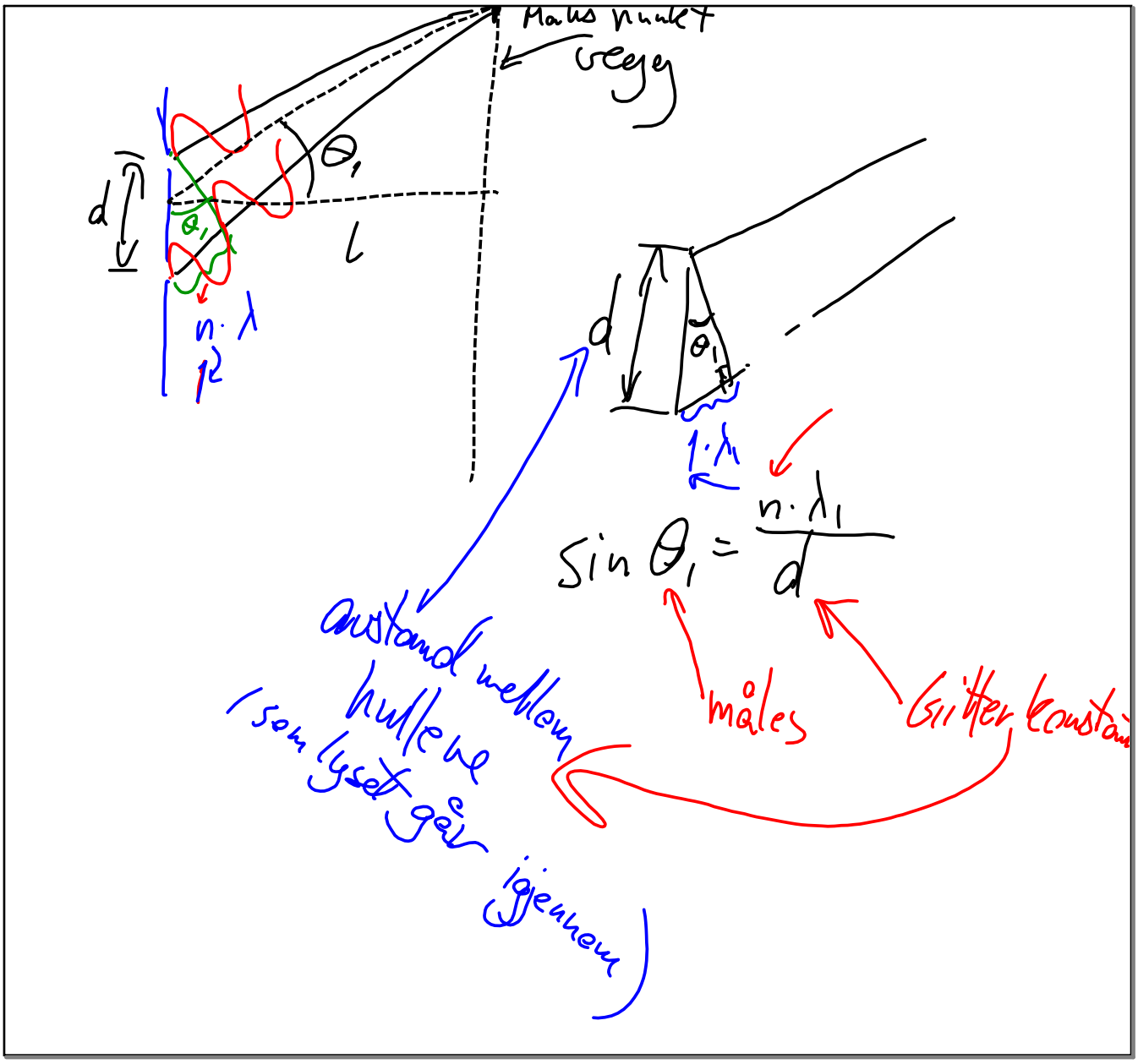
$= 6{,}00 \cdot 10^{8+6} \left[\frac{1}{s}\right] = 6{,}00 \cdot 10^{14}$ [Hz]

$\lambda = 300$ [nm]

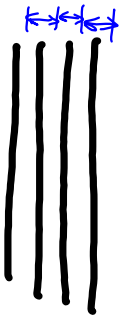
$\nu = \frac{c}{\lambda} = \frac{3{,}00 \cdot 10^8}{0{,}3 \cdot 10^{-6}} = 1{,}0 \cdot 10^{15} = 10^{14}$


P
λ1
λ2
λ3
λ
ΔE = h · f = h · c/λ
Plancks konstant
måles


B1
i fase
B2
Sum
B1
i motfase
B2
Sum


Maks punkt
d
θ1
L
n · λ
1 · λ
sin θ1 = n · λ1 / d
avstand mellom hullene som lyset går igjennom
måles
Gitter konstant

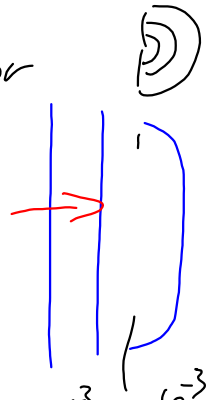
Gitter d : Gitterkonstant



linjer/mm oppgis for et gitter

du må regne ut gitterkonstanten d

Eks 300 linjer/mm

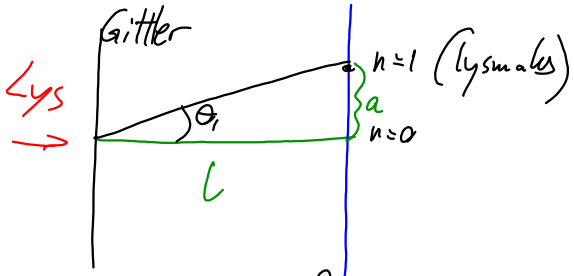


$$d = \frac{1}{300\left[\frac{1}{mm}\right]} = \frac{1}{300\left[\frac{1}{10^{-3}m}\right]} = \frac{10^{-3}}{300\left[\frac{1}{m}\right]} = \frac{10^{-3}\,[m]}{0{,}3\cdot 10^{3}}$$

$$\frac{1}{0{,}3}\cdot 10^{-6}[m] = 3{,}3\cdot 10^{-6}[m]$$

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

$$\lambda = \frac{d}{n}\cdot \sin\theta_n$$



$$\tan\theta_1 = \frac{a}{L}$$

$$\theta_1 = \tan^{-1}\left(\frac{a}{L}\right)$$