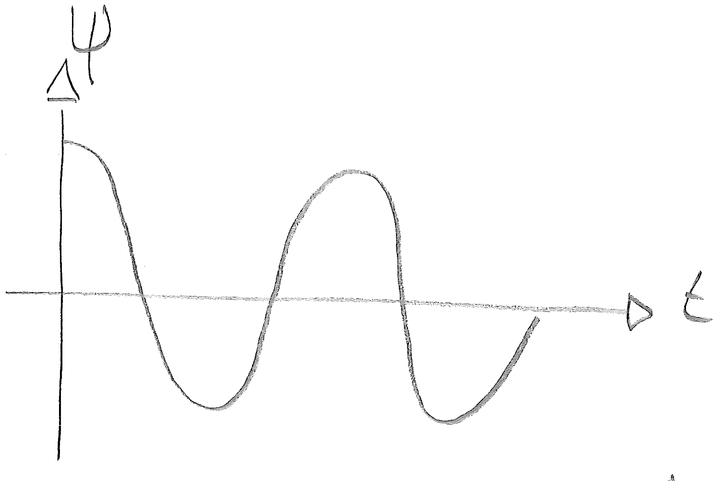
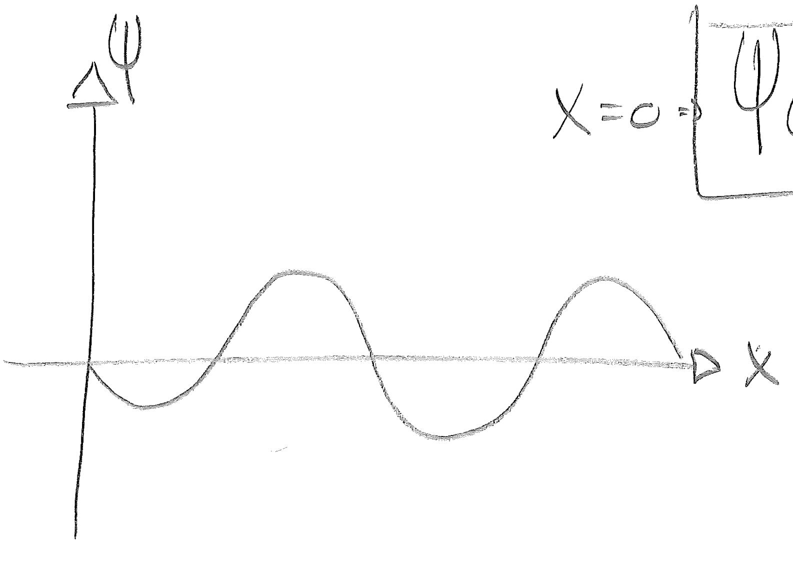
Föreläsning 4

Vågfunktion

Blablablablablablablablablablablablablablablablablablabl





$x = 0 \Rightarrow$ $\Psi(t) = A\sin(\omega t + \alpha)$

Det tar tiden $t_1 = \frac{x}{v}$ att flyttas från $x = 0$ till x.

$x = x: \Psi(t) = A\sin(\omega(t - t_1) + \alpha)$

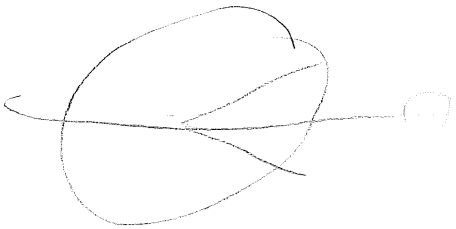
$$v = \frac{\lambda}{T}$$

$$\omega = 2\pi f = \frac{2\pi}{T}$$

$$k = \frac{2\pi}{\lambda}$$

$$\Rightarrow \psi(x,t) = A\sin\left[\frac{2\pi}{T}\left(t - \frac{xT}{\lambda}\right) + \alpha\right]$$

$$= A\sin\left[2\pi\left(\frac{t}{T} - \frac{x}{\lambda}\right) + \alpha\right)$$



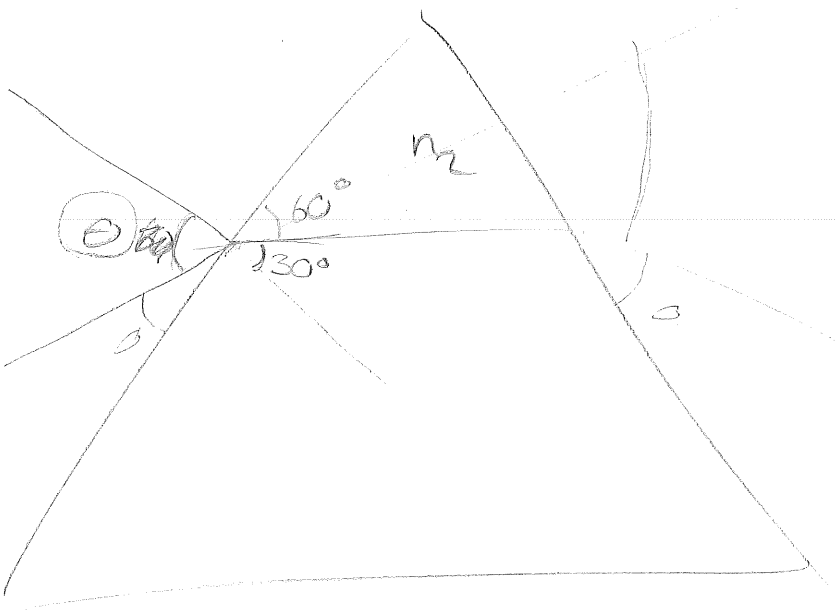
sätt $\alpha = 0$

$$\psi(x,t) = A\sin[k(x \pm vt)]$$

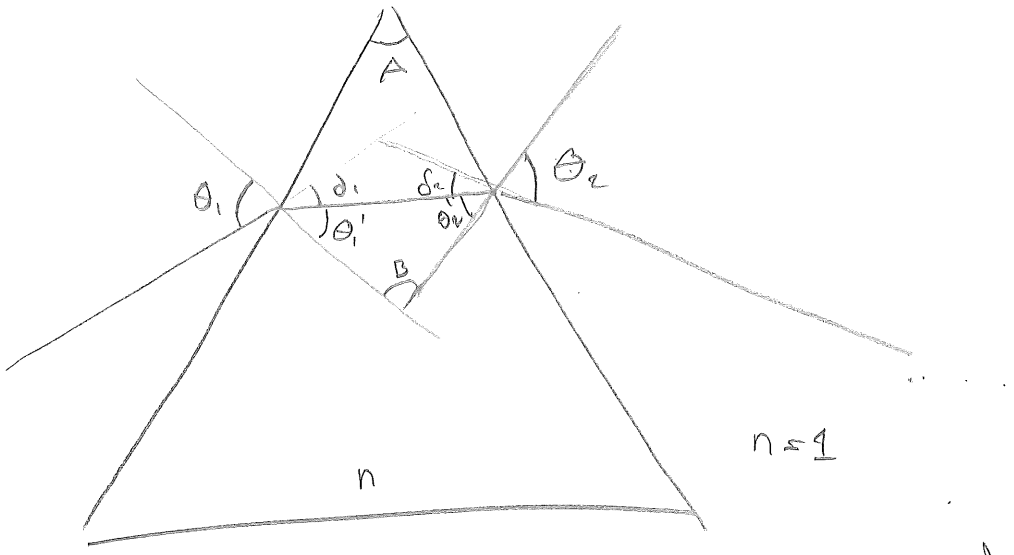
$$\Rightarrow \psi(x,t) = A\sin[(kx + \omega t)]$$

$$\Rightarrow \psi(x,t) = A\sin\left[2\pi\left(\frac{x}{\lambda} \pm \frac{t}{T}\right)\right.$$

$$\sin\theta \cdot \not{\theta} = n_2 \cdot \sin 30°$$



Prismor



$$\begin{cases} \sin\theta_1 = n\sin\theta_1' \\ n\sin\theta_2' = \sin\theta_2 \end{cases}$$

$$\theta_1' = \operatorname{asin}\left(\frac{\sin\theta_1}{n}\right)$$

$$\theta_2 = \operatorname{asin}(n\sin\theta_2')$$

$$\delta_1 = \theta_1 - \theta_1'$$

$$\delta_2 = \theta_2 - \theta_2'$$

$$\delta = \delta_1 + \delta_2 = \theta_1 + \theta_1' + \theta_2 - \theta_2' =$$

$$\theta_1 + \theta_2 - A =$$

$$= \theta_1 + \arcsin\left(n\sin\left(A - \theta_1'\right)\right) - A$$

$$\begin{cases} B = 180 - \theta_1' - \theta_2' \\ B = 360 - 180 - A \end{cases}$$

$$A = \theta_1' + \theta_2'$$