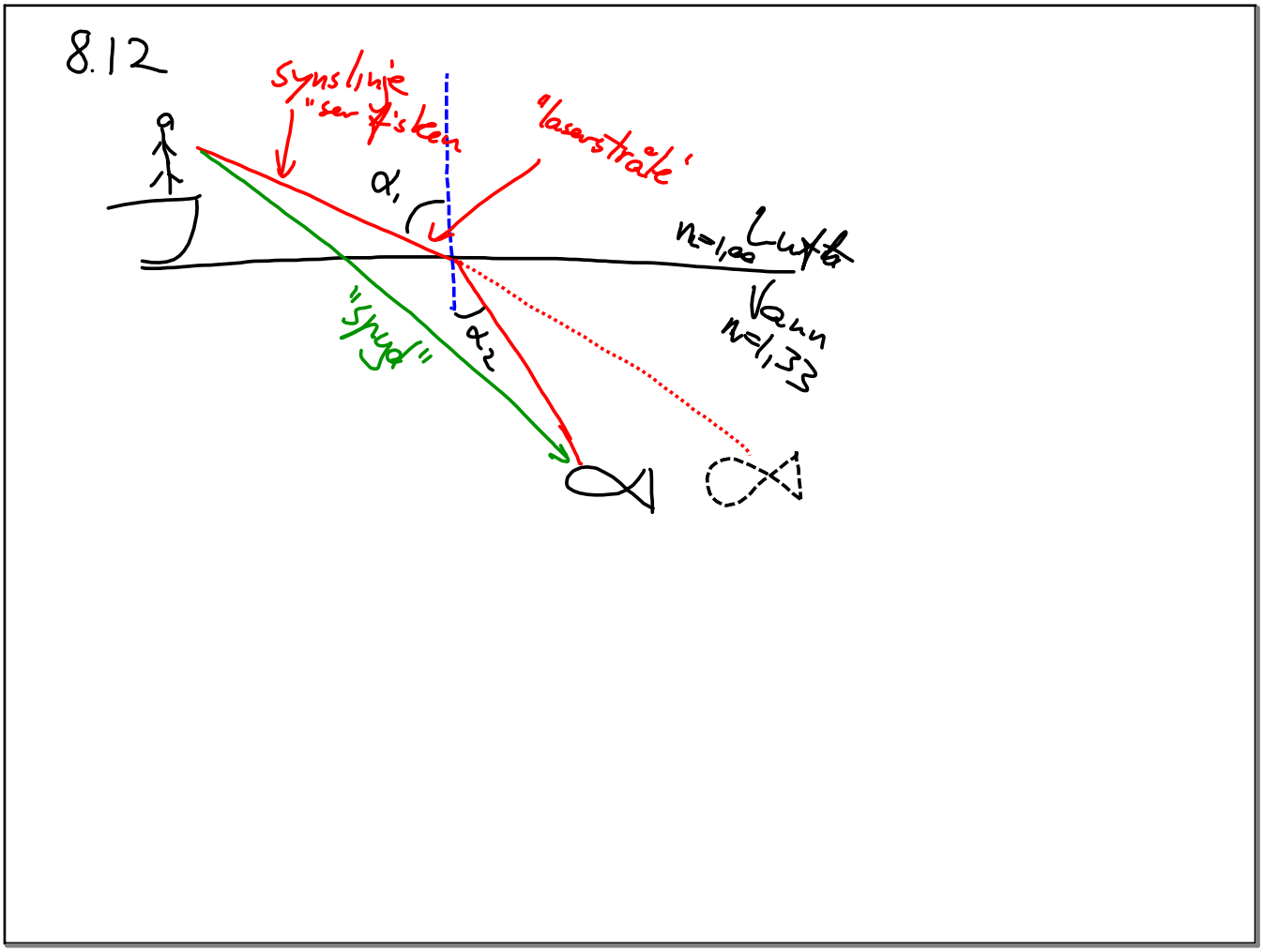
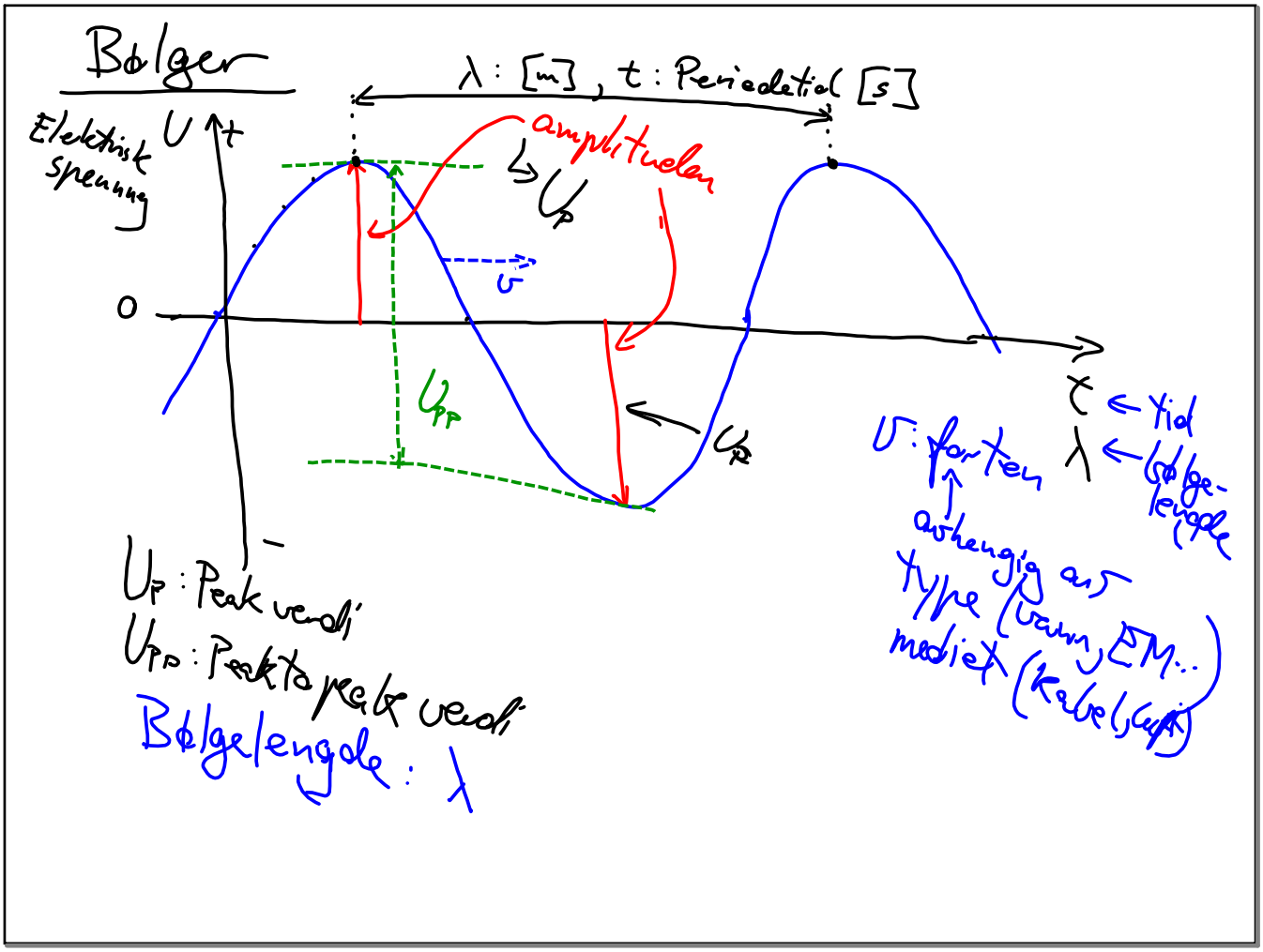
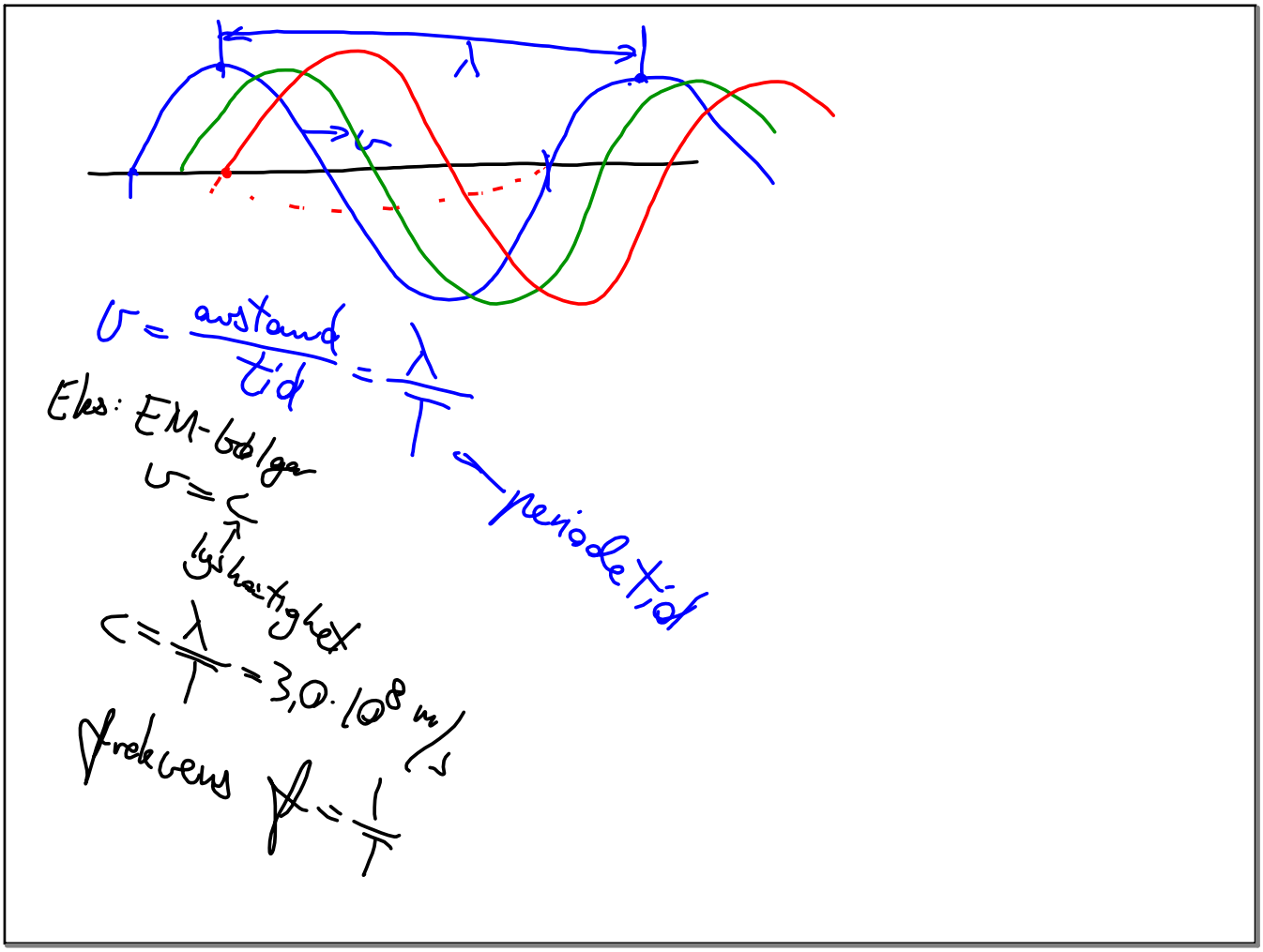
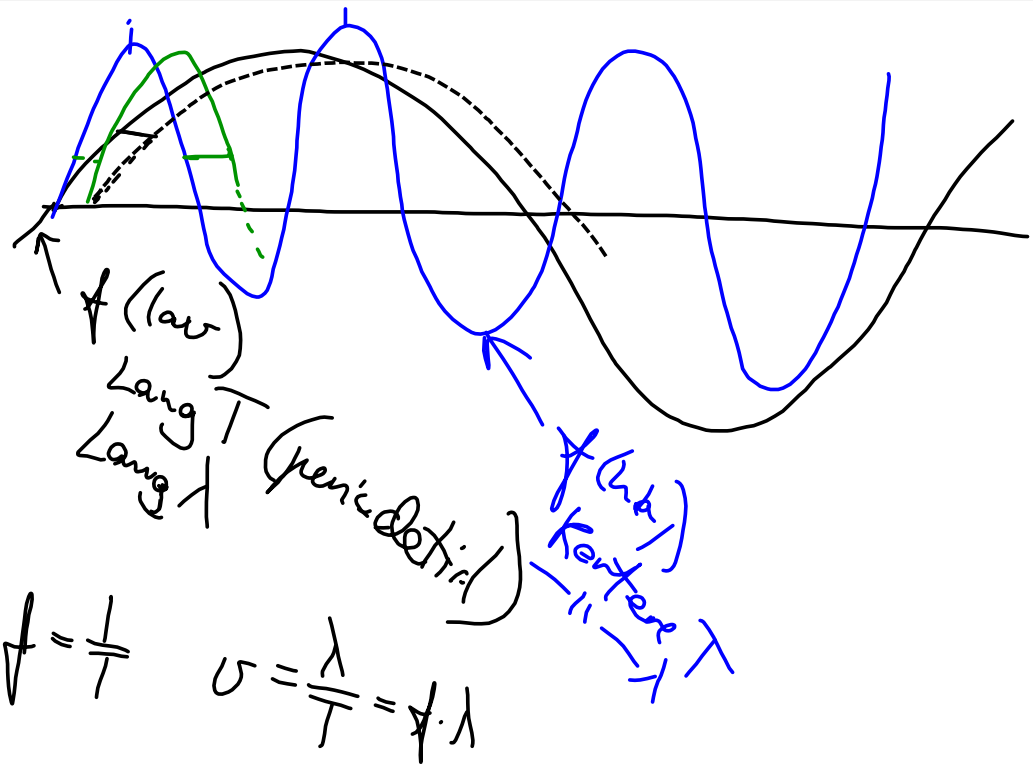

8.12
synslinje
"ser fisken"
"laserstråle"
α1
n=1,00
Luft
Vann
n=1,33
"synd"
α2


Bølger
λ : [m] , t : Periodetid [s]
Elektrisk spenning
U
t
amplituden
U_p
$\vec{v}$
0
U_{pp}
x
Tid
λ
Bølge-lengde
U_p : Peak verdi
U_{pp} : Peak to peak verdi
Bølgelengde : λ
v: farten
avhengig av
type (vann, EM...
medie (kabel, luft)


λ
v
v = avstand / tid = λ / T
periodetid
Eks: EM-bølger
v = c
lysfarten
c = λ / T = 3,0 · 10^8 m/s
frekvens f = 1 / T



$f = \frac{1}{T}$ $v = \frac{\lambda}{T} = f \cdot \lambda$

Eks: EM

$c = f \cdot \lambda$

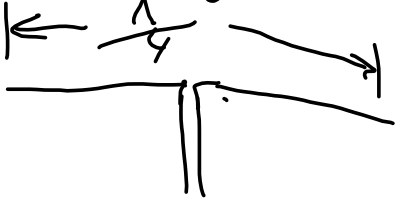
$[Hz] = \left[\frac{1}{s}\right]$

$f = 100\,MHz$ ← radiosignal

$\lambda = \frac{3{,}0 \cdot 10^8 \left[\frac{m}{s}\right]}{100 \cdot 10^6 \left[\frac{1}{s}\right]} = 3{,}0\ m$

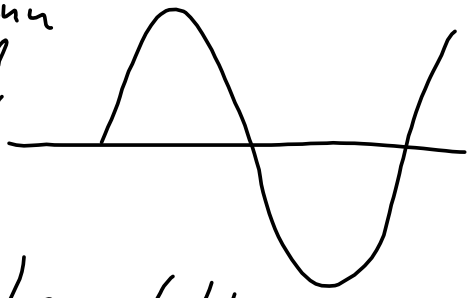
Antenne (for å ta inn radiosignaler)

Kvart-bølge antenne



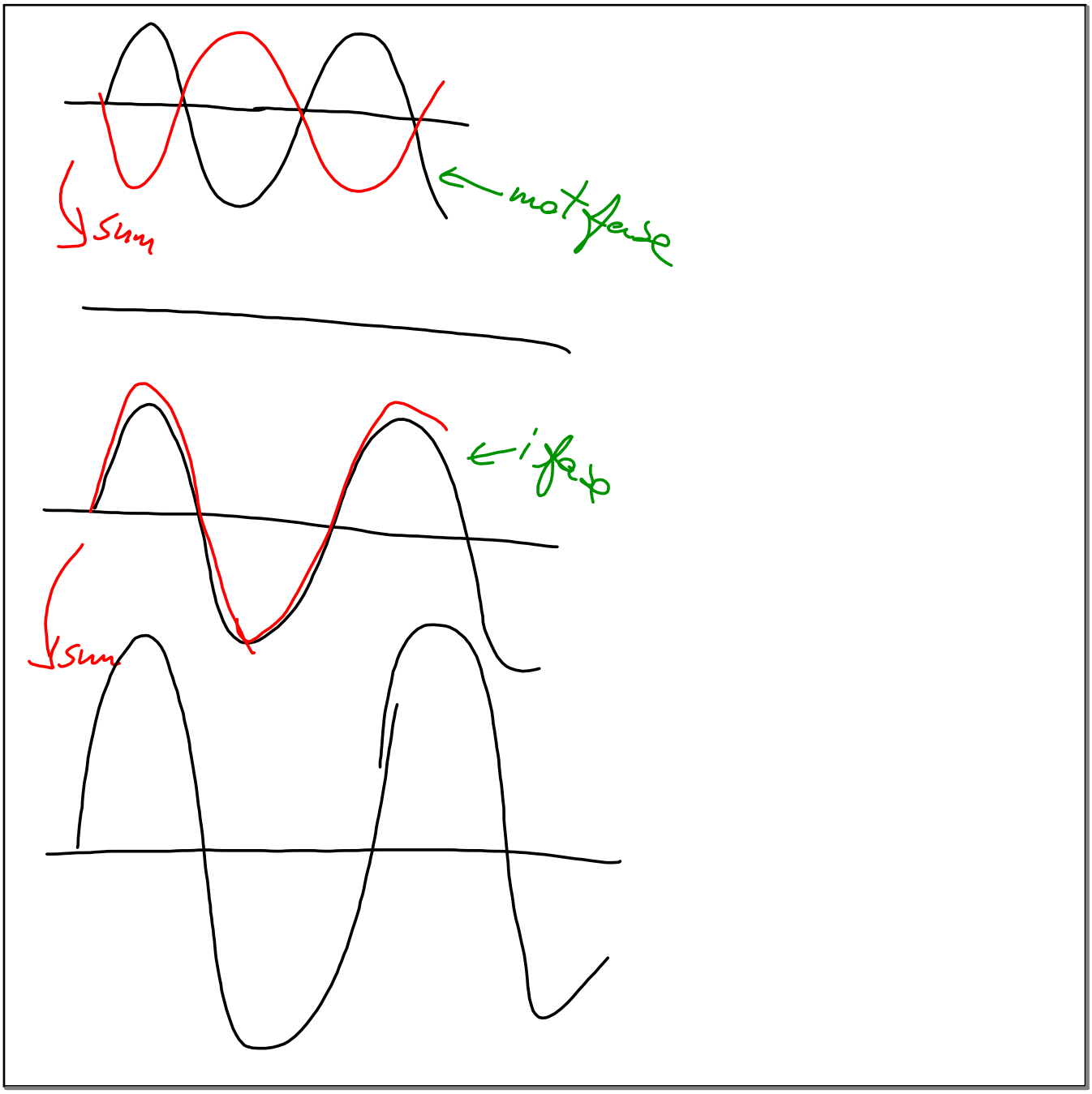
Tverrbølger:

Vanlig EM lys



Langsbølger

Lyd


sum
motfase
ifase
sum