3)

$\nu := 10^{14}\ Hz$

$n_1 := 1 \qquad n_2 := 4$

$T := 1 - \left| \frac{n_1 - n_2}{n_1 + n_2} \right|^2 = 0.64$

$\frac{1}{T} = 1.563$

We moove from air n1 = 1
to some substance with n2 = 2
Transmission T shows hom much
light or electric field goes through.
E1 = E1
E2 = E1*T
Field weakening is E1/E2 = 1/T.

4)

$d := 0.01\ mm$

$\lambda := 500\ nm$

$L := 2\ m$

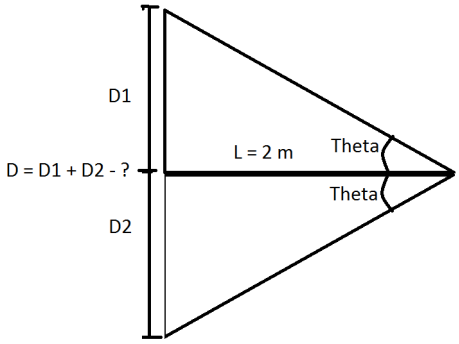
$d \cdot sin(\theta_m) = m \cdot \lambda$

$m := 1$

$\theta_1 := \operatorname{asin}\left(\frac{\lambda}{d}\right) = 0.05\ rad$

$\frac{D1}{L} = sin(\theta_1)$

$D := 2 \cdot L \cdot \sin(\theta_1) = 20\ cm$



5)

$T = e^{-\mu \cdot l}$

$T = e^{-\mu \cdot l} = e^{-1}$

$-\mu \cdot l = -1$

$l(\mu) := \frac{1}{\mu}$

Keha is sinist värvi, sest sinist värvi
neelatakse kõige vähem.

$\mu_1 := 0.2 \cdot \frac{1}{cm}$ $\quad \mu_2 := 5 \cdot \frac{1}{cm}$ $\quad \mu_3 := 10 \cdot \frac{1}{cm}$

$l(\mu_1) = 5\ cm$ $\quad l(\mu_2) = 0.2\ cm$ $\quad l(\mu_3) = 0.1\ cm$

if $\quad l := 1\ cm$

$T := e^{-\mu_1 \cdot l}$ $\quad T := e^{-\mu_2 \cdot l}$ $\quad T := e^{-\mu_3 \cdot l}$

$\frac{1}{T} = e^{0.2}$ $\quad \frac{1}{T} = e^{5}$ $\quad \frac{1}{T} = e^{10}$