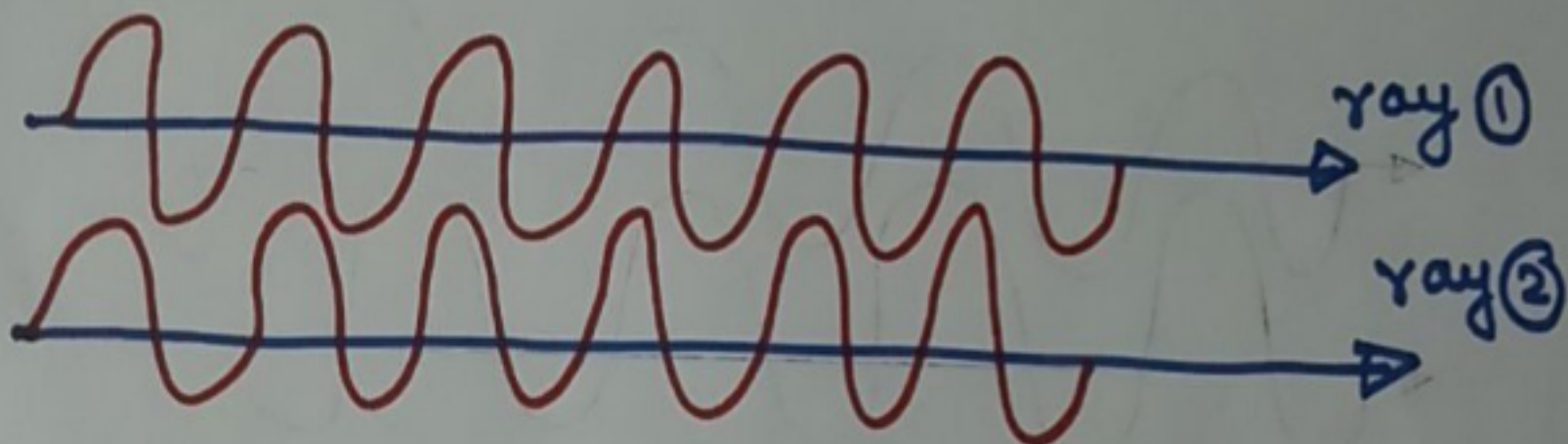
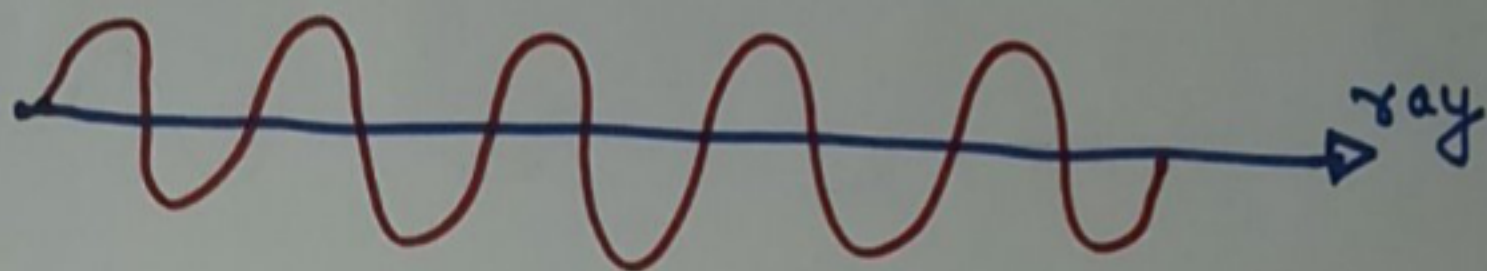


① Parallel rays interfere with each other?

↓
wavenormal \perp wavefront



∴ waves interfere with each other.

② How many rays we should consider?

$$\textcircled{I}, \textcircled{\mu_1} \rightarrow \textcircled{\mu_2}, \textcircled{I_R}$$

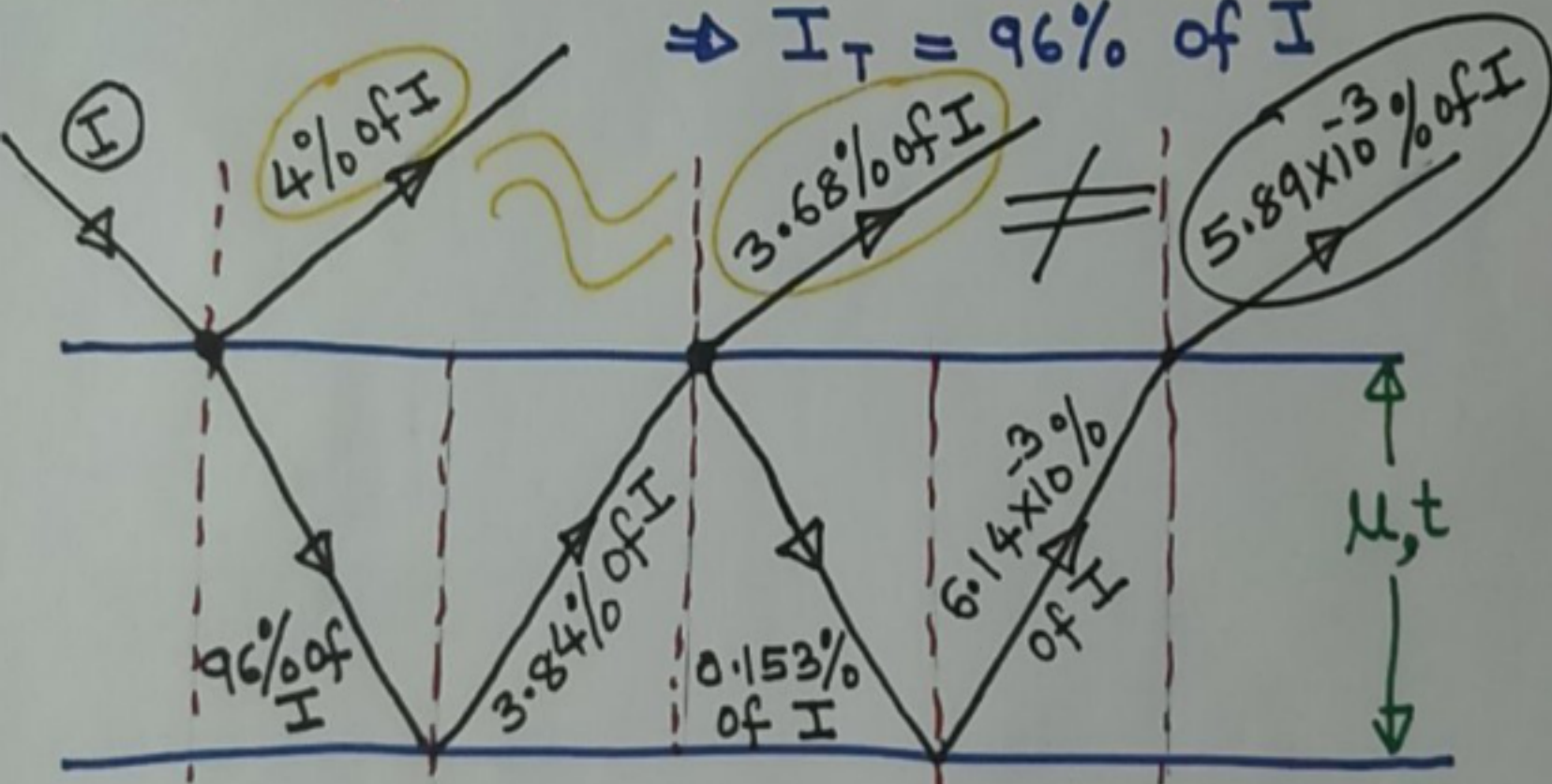
$$I_R = I \left(\frac{\mu_2 - \mu_1}{\mu_2 + \mu_1} \right)^2 \quad \text{consider air-glass}$$

$$I_R = I \left(\frac{0.5}{2.5} \right)^2 = I \left(\frac{1}{5} \right)^2 = I (0.2)^2$$

$\mu_1 = 1 \quad \mu_2 = 1.5$

$$I_R = I (0.04) \Rightarrow I_R = 4\% \text{ of } I$$

$$\Rightarrow I_T = 96\% \text{ of } I$$



\therefore we should consider only first two rays.

③ Thickness of the film?

Let $t \rightarrow$ thickness of film

when t is very large

\Rightarrow coherence may be lost.

when t is very small

\Rightarrow div. of amp./int.
may not be possible.

from expt., it is found that

If $\lambda \Rightarrow$ wavelength of incident
light

then $t = \left(\frac{\lambda}{10}\right)$ to (10λ)