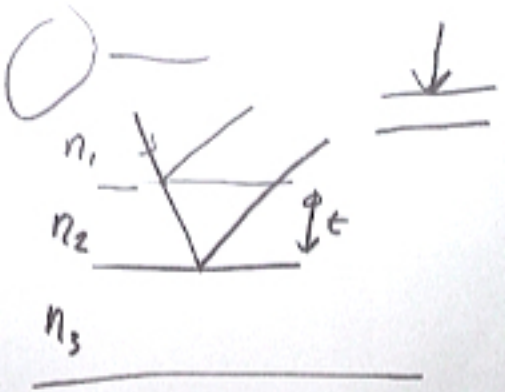
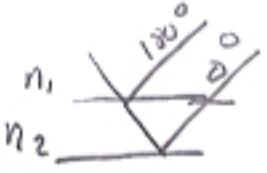


$\delta = 2 n_2 t$;

$n_1 > n_2$ 0° $n_2 > n_3$ 0°

$n_1 < n_2$ 180° $n_2 < n_3$ 180°



$n_1 < n_2$

$n_3 < n_2$

Constructive

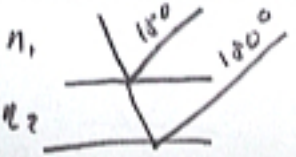
$2n_2 t = (m + \frac{1}{2})\lambda$

$m = 0, 1, 2, \ldots$

Destructive

$2n_2 t = m\lambda$

$m = 1, 2, 3, \ldots$



$n_1 < n_2$

$n_2 < n_3$

Constructive:

$$2n_2 t = (m)\lambda$$

$m = 1, 2, \ldots$

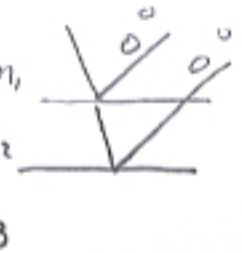
Destructive:

$$2n_2 t = (m + \tfrac{1}{2})\lambda$$

$m = 0, 1, 2, \ldots$

$n_1 > n_2$

$n_2 > n_3$



Const:

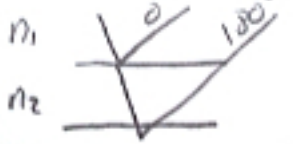
$$2n_2 t = (m)\lambda$$

$m = 0, 1, 2, \cdots$

Dest:

$$2n_2 t = (m + \tfrac{1}{2})\lambda$$

$m = 0, 1, 2 \cdots$



$n_1 > n_2$

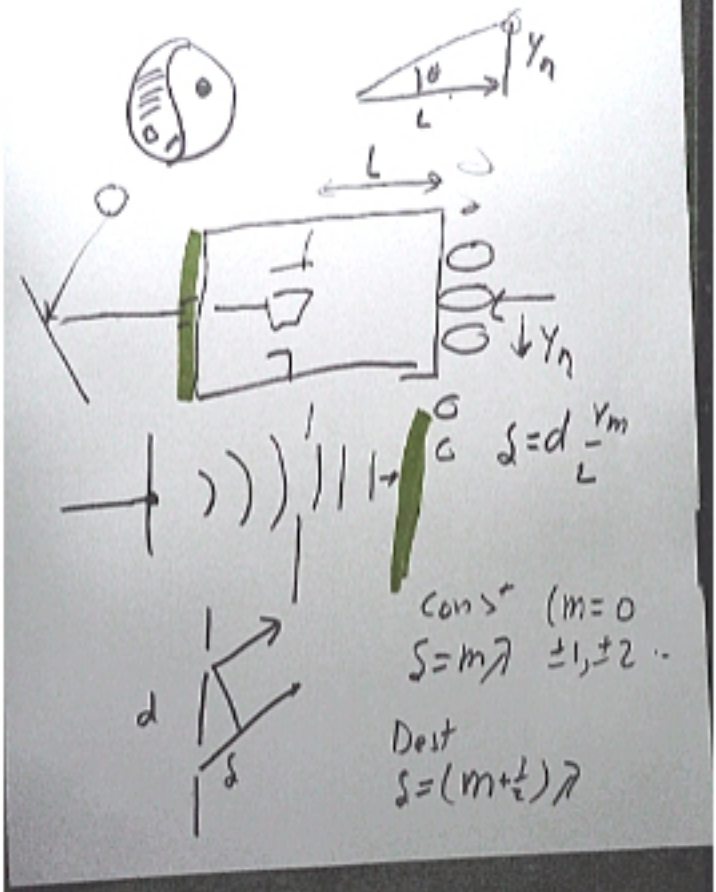
$n_2 < n_3$

Const: $2n_2 t = (m+\frac{1}{2})\lambda$

$m = 0, 1, \ldots$

dest: $2n_2 t = m\lambda$

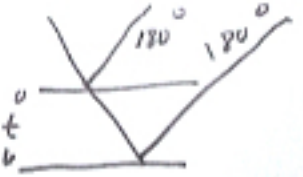
$m = 1, 2, \ldots$


θ
y_m
L
L
y_m
d
$\delta = d \frac{y_m}{L}$
Cons^{n} ($m = 0$
$\delta = m\lambda$ $\pm 1, \pm 2 \ldots$
Dest^{n}
$\delta = (m + \frac{1}{2})\lambda$

$n_1 = 1$

$n_2 = 1.2$

$n_3 = 1.6$



Const $\lambda = 490\ nm$

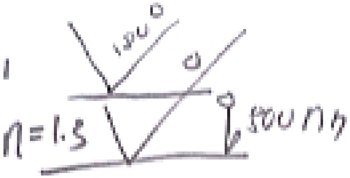
$nm = 1 \times 10^{-9}\ m$

$2 n_2 t = m\lambda \quad m = 1, 2, 3, \ldots$

$t_{min} \quad (m = 1)$

const $t_{min} = \frac{\lambda}{2n_2} = \frac{490}{2(1.2)} = 191\ nm$

dest $t_{min} = \frac{\lambda}{4n_2} \sim 52\ nm$

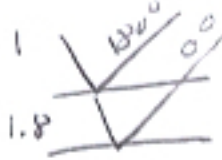


$$2n_2 t = \left(m+\frac{1}{2}\right)\lambda$$

$m = 0, 1, 2, 3, \ldots$

$$2n_2 t = \frac{\lambda}{2} \quad 4n_2 t$$

⋮



Coung

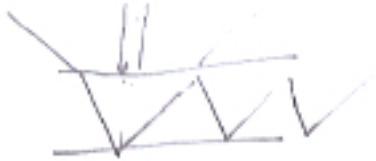
$\delta = 2n_2 t = (m+\frac{1}{2})\lambda$

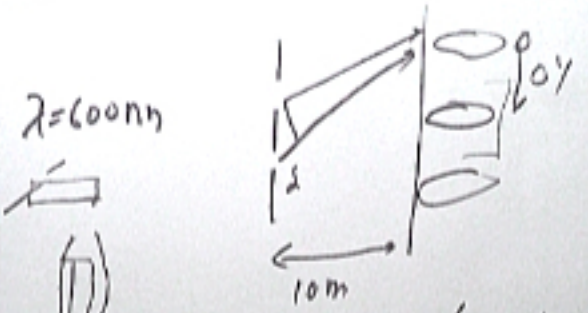
$m = 0, 1, 2, \cdots$

$2n_2 t_{min} = \frac{\lambda}{2}$

$t_{min} = \frac{\lambda}{4n_2}$ $\frac{600}{4(1.8)}$

83 nm





Const: $\delta = m\lambda \quad (m = 0, \pm 1, \ldots)$

dest: $\delta = (m+\frac{1}{2})\lambda$

$$\Delta y_{m+1} = \frac{(m+1)\lambda L}{d} \qquad y_m = \frac{m\lambda L}{d}$$

$$\Delta y = \frac{\lambda L}{d} = \frac{600\ 10}{.2\times10^{-3}}$$

$$\sim 3\times10^{-2}\ m$$