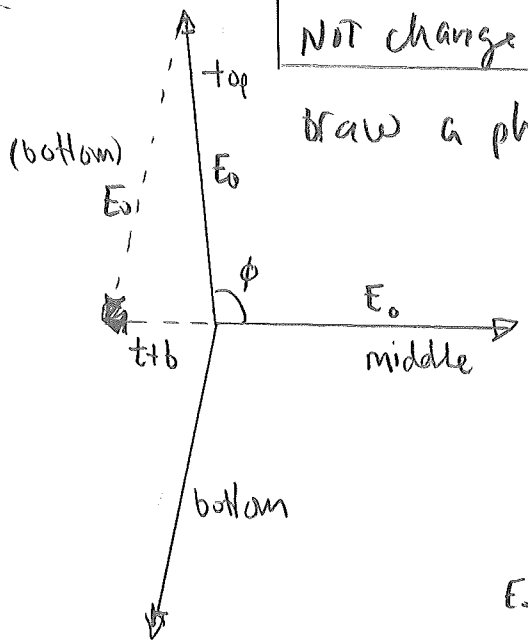
At what θ away from the central maximum will blocking the center slit of 3 NOT change the intensity.

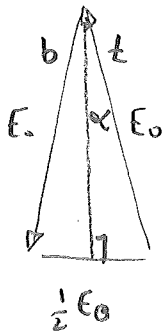


Draw a phasor diagram, with middle slit along x.

$$|\vec{m} + (\vec{t}+\vec{b})| = |\vec{t}+\vec{b}|$$

From diagram

$|\vec{t}+\vec{b}| = \frac{1}{2}E_0$, the field from one slit.



So $\sin\alpha = \frac{1}{4}$

$\alpha = 14.48°$

$\phi = 90° + \alpha = 104.47°$

Use $\phi = \frac{\Delta \text{path}}{\lambda} \cdot 2\pi = \frac{d\sin\theta}{\lambda} \cdot 2\pi$ to find θ!