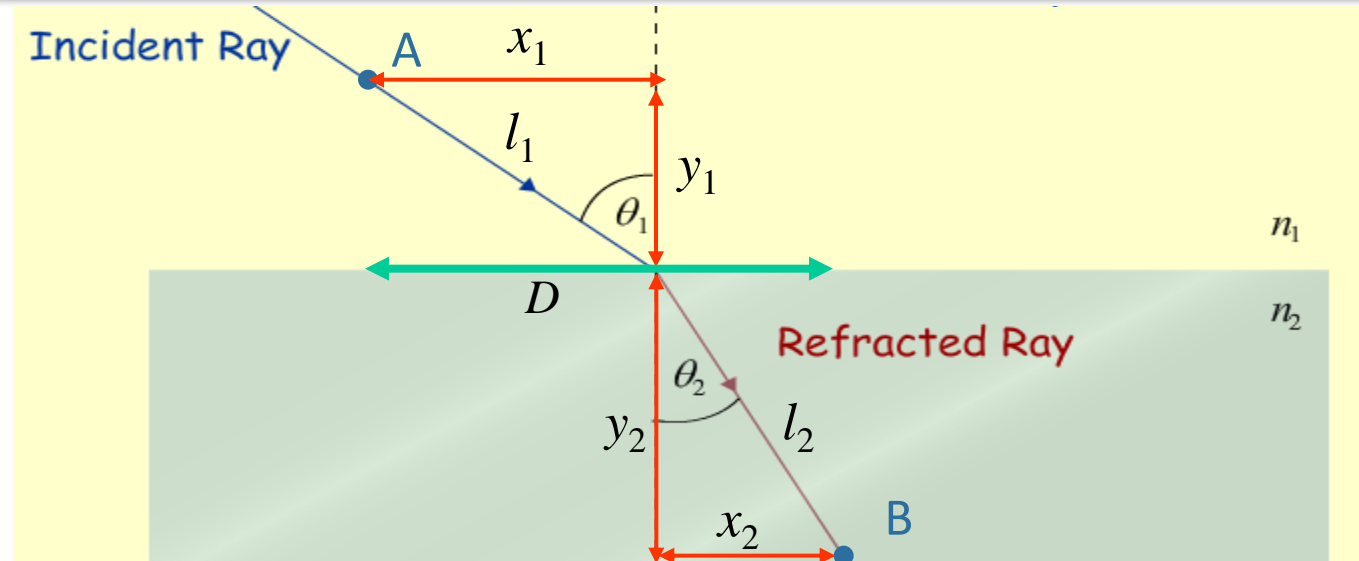Same Principle works for Light!

Time from A to B :

$$t = \frac{l_1}{v_1} + \frac{l_2}{v_2} = \frac{\sqrt{x_1^2 + y_1^2}}{v_1} + \frac{\sqrt{x_2^2 + y_2^2}}{v_2}$$

To find minimum time, differentiate t wrt x_1 and set $= 0$

$$\frac{dt}{dx_1} = \frac{x_1}{v_1\sqrt{x_1^2 + y_1^2}} + \frac{x_2}{v_2\sqrt{x_2^2 + y_2^2}}\frac{dx_2}{dx_1}$$

How is x_2 related to x_1? $x_2 = D - x_1$ ➡ $\dfrac{dx_2}{dx_1} = -1$

Setting
$dt/dx_1 = 0$ ➡ $\dfrac{x_1}{v_1 l_1} - \dfrac{x_2}{v_2 l_2} = 0$ ➡ $\dfrac{\sin\theta_1}{v_1} = \dfrac{\sin\theta_2}{v_2}$ ➡ $v = c/n$ $n_1\sin\theta_1 = n_2\sin\theta_2$