

PHYS222
Reflection & Refraction
Discussion Items

-Presentation of Results

Law of Reflection

Ray	θ_i (degrees)	θ_r (degrees)
1	$\theta_i \pm \delta\theta$	$\theta_r \pm \delta\theta$
2	$\theta_i \pm \delta\theta$	$\theta_r \pm \delta\theta$

Index of Refraction

$$n_{aver} \pm \delta n \quad \text{Where } \delta n = \frac{n_{high} - n_{low}}{2}$$

Note that n_{aver} is simply the average value of the **4 different measurements (2 per line)** of the **single index of refraction** of the block. Round δn to one significant figure.

Total Internal Reflection

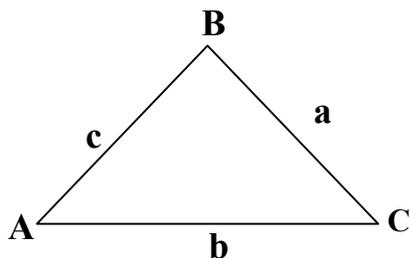
Critical angle (θ_c) calculated-

Theta incidence 1 (θ_{i1})- Theta incidence 2 (θ_{i2})-

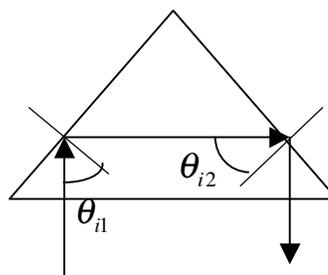
Image of Plane Mirror

Property	Object	Image
Angle A	45 degrees	
Angle B	90 degrees	
Angle C	45 degrees	
Side a	7 cm	
Side b	9.9 cm	
Side c	7 cm	

Labels used for image (triangle):



Labels used for total internal reflection triangle:



-Sample calculations

$$\theta_c = \sin^{-1} \frac{n_{air}}{n_{plastic}} \approx \sin^{-1} \frac{1}{1.45} = 43.6^\circ$$