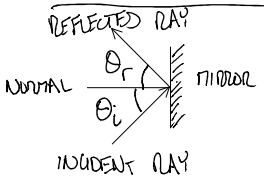
Thursday, May 29, 2014 4:04 PM

LAB 8: REFLECTION & REFRACTION



θ_i & θ_r ARE MEASURED FROM THE NORMAL

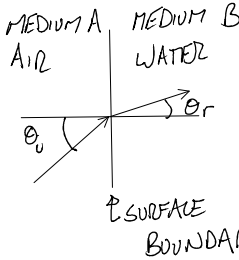
LAW OF REFLECTION

$$\theta_i = \theta_r$$

WHERE θ_i = ANGLE OF INCIDENT
θ_r = ANGLE OF REFLECTION

REFRACTION $n = \frac{c}{v}$

WHERE n = INDEX OF REFRACTION
c = SPEED OF LIGHT IN A VACUUM
v = SPEED OF LIGHT IN A GIVEN MEDIUM



MATERIAL	n
AIR	≈ 1
WATER	≈ 1.33
ACRYLIC	≈ 1.49

LAW OF REFRACTION

$$n_i \sin\theta_i = n_r \sin\theta_r$$

IF $n_r > n_i$
↳ REFRACTED RAY BENDS TOWARD NORMAL

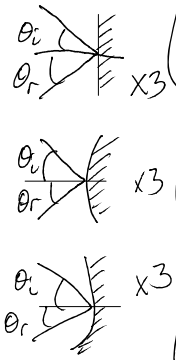
IF $n_r < n_i$
↳ REFRACTED RAY BENDS AWAY NORMAL

WHEN $\theta_i \to \theta_r = 90°$

$$\theta_{critical} = \sin^{-1}\left(\frac{n_r}{n_i}\right)$$

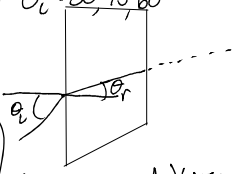
EXPERIMENT

PART 1 FOR 30°, 45°, 60°

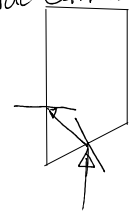


PART 2

θ_i = 30°, 45°, 60°

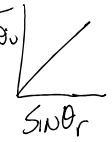


FOR CRITICAL ANGLE;



REPORT

- COVERAGE
- MIRROR TRACING
- DIFFRACTION TRACING
- TABLES
- PLOT



PLOT GOES THROUGH ORIGIN