

PHYS 303/324 – Worksheet – Reflection, Refraction and Images

Part 1. The Laws of Reflection and Refraction

1. The Law of Reflection

The angle of incidence on boundary 1 with estimated uncertainty is _____ ° ± _____ °

The angle of reflection with estimated uncertainty is _____ ° ± _____ °

Are these two angles equal within estimated uncertainty? _____

2. Snell's Law

The angle of refraction on boundary 1 is _____ °

The index of refraction for boundary 1 is (show the calculation)

The angle of refraction on boundary 2 is _____ °

The index of refraction for boundary 2 is (show the calculation)

3. Dispersion, qualitative only

Which color is bent more, red or blue? Which has the larger index of refraction, red or blue light (blue, look at Snell's Law)?

4. Total Internal Reflection, qualitative only

Describe your observations of the intensity of the beam exiting from boundary 2 as you rotate the prism. What is the "cut ray" in fig 2 above, is the intensity of the beam exiting from boundary 2 maximal or minimal? (In which boundary do you observe total internal reflection?)