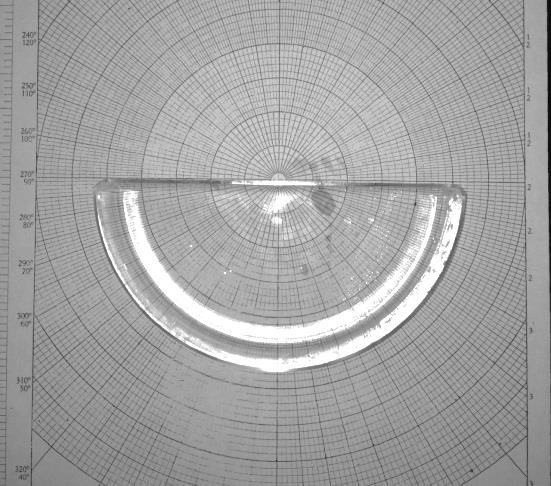
Physics 40/41 Semi Circular Dish Lab

1. Obtain the following materials:

* Semi-circular dish
* Polar coordinate paper
* Laser pointer

\*Do not point the laser pointer unless you are actively working on the lab. Do not aim at a person (yourself included)

1. Set the semi-circular dish on the polar coordinate paper so the straight edge lies along the 90˚/270˚ line.
2. Point the laser pointer along the 10˚ line (so the angle of incidence is 10˚). Using the polar coordinate paper, measure the angle of refraction. Record both values in your data table.
3. Continue step # in 10˚ increments until the angle of incidence is 80˚.
4. Repeat step #’s 2&3 for corn oil and polyvinyl oil.
5. Clean up your mess!!!!!!!
6. Using excel, create the following data table:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Material | Θ1 | Θ2 | Θ1/θ2 | sin(θ1) | sin(θ2) | sin(θ1)/sin(θ2) |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

To be incorporated into your conclusion:

* Why doesn’t the laser beam refract when it strikes the *outer* (curved) edge of the dish?
* Show the math using Snell’s Law to prove that
* Find the index of refraction for the three materials.
* How does this resonate with our learned knowledge in class?
* Validity/improvements
* How can this information and technique be of use?