Analytical Physics II Laboratory
Dr. Pogo

Due January 30, 2024

Quiz #2

Name:_____

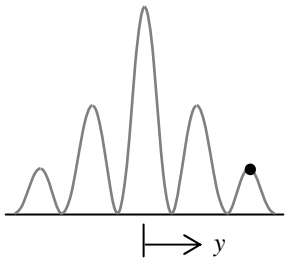
1. For a *single* slit experiment, the middle position on the screen is: **[bright] [dark]** (circle one).

2. For a *double* slit experiment, which distance should be the largest? **[λ] [D] [d]**

3. For a *double* slit experiment with light, which distance should be the smallest? **[λ] [D] [d]**

For the remainder of these questions, use: λ = 632.8 nm, d = 300 μm, a = 80 μm, and D = 1.8 m.

4. For a double slit experiment, you see a pattern like this, where "height" corresponds to "brightness" or intensity. What is "m" for the bright point indicated by the dot?



m = _____

5. What is the position y for this bright spot? y = _____ mm

6. What is θ for this bright spot? θ = _____ °

7. For these bright spots, you plot y vs m. Determine the slope of this plot, as a number.

slope = _____ mm

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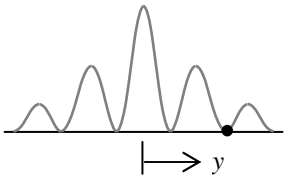
8. Here is a similar intensity pattern for a single slit experiment. What is "n" for the dark point indicated by the dot?



n = _____

9. What is the position y for this dark spot? y = _____ mm

10. For these dark spots, you plot y vs n. Determine the slope of this plot, as a number.

slope = _____ mm