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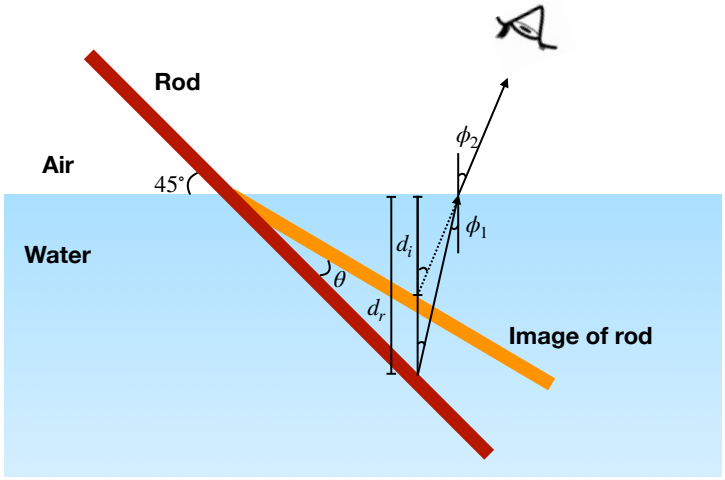
Physics 2C, Winter 2020

Reading Assignment due Friday 2/28: Submit via Gradescope by 8:00am

1. Suppose you're looking at a rod submerged in water at an angle of 45° from nearly straight above (i.e. ϕ_2 and ϕ_1 in the diagram are small angles). The rod appears to be bent as it enters the water so that the apparent depth of the image d_i is smaller than the actual depth of the rod d_r.



2. Using Snell's law, determine the ratio of the apparent depth of the image to the real depth of the rod d_i/d_r. It will help to consider the small angle approximation $\sin\phi_i \approx \tan\phi_i$.

3. What is the angle θ of the image of the bent rod with respect to the real straight rod?

For extra practice (not due): From Chapter 34 of Knight, 4th edition: Conceptual Questions: 5. Exercises: 17-20.