

# Problem Set 4

## Optics

*Due: 19 Feb 2019<sup>1</sup>*

PHYSICS 375

**Problem 1.** Hecht, Problem 4.2

**Problem 2.** Hecht, Problem 4.6

**Problem 3.** Hecht, Problem 4.8

**Problem 4.** Hecht, Problem 4.15

**Problem 5.** Hecht, Problem 4.22

**Problem 6.** A fish looking straight up toward the smooth surface of a pond receives a cone of light rays and sees a circle of light filled with the images of sky and birds and whatever else is up there. This bright circular field is surrounded by darkness. Explain what is happening and compute the cone angle.

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<sup>1</sup>Due at beginning of class