

# Problem Set 1

Optics

PHYSICS 375

*Due: 25 January 2022 — at the beginning of class*

## **Important note on problem sets:**

I encourage you to neatly handwrite your problem set solutions. Neatness and legibility count. In addition, your solutions should be written as if the audience is a student at another university optics course looking for help in understanding the solution to the problem. As such, you should *lead the reader through the solution by appealing to relevant physical principles* and you should write in grammatically correct english. The well written problem set will read like an excellent solution manual, starting with a statement of the original question, and a solution with textual descriptions interspersed with important mathematical equations (as well as pictorial and graphical descriptions when needed) placed on a separate line, centered on the page. *A problem set solution with only mathematical equations and no narrative description will receive at most 70% credit.*

**\*\* Late problem sets will lose 50% per day late.**

**Problem 1.** Hecht, Problem 2.1

**Problem 2.** Hecht, Problem 2.4

**Problem 3.** Hecht, Problem 2.9

**Problem 4.** Hecht, Problem 2.17

**Problem 5.** Hecht, Problem 2.39

**Problem 6.** Hecht, Problem 2.41

**Problem 7.** Hecht, Problem 2.47