Physics 5B | **Homework Set #8** | **Winter 2009**

DUE: WEDNESDAY MARCH 4, 2009

Assigned reading: Giancoli, Chapter 33, sections 5–9, Chapter 34, sections 1–3.

1. True/false questions: For each of the following statements, indicate whether the statement is true or false. Briefly explain your reasoning (for example, if false, provide a counter-example).
   (a) A camera lens must be moved closer to the film in order to focus on a closer object.
   (b) The image formed on the retina of the human eye is inverted.
   (c) A lens that has a focal length of 5 cm is used as a magnifying glass. To obtain maximal magnification, the object should be placed at the focal point of the lens.
   (d) The ray model of light and the wave model light yield identical predictions for all optical phenomena.
   (e) In Young's double-slit experiment, neighboring points of constructive interference are uniformly spaced.
   (f) Light emitted from a lamp in your home is an example of an incoherent source of light.

To earn full credit on the following problems, you must exhibit the steps that lead to your final results. The graded homework will be based on the clarity of your method of solution as well as on your final answer.

2. Giancoli, Chapter 33, problem 36
3. Giancoli, Chapter 33, problem 44
4. Giancoli, Chapter 33, problem 48
5. Giancoli, Chapter 33, problem 56
6. Giancoli, Chapter 33, problem 70
7. Giancoli, Chapter 33, problem 78
8. Giancoli, Chapter 33, problem 104
9. Giancoli, Chapter 34, problem 6
10. Giancoli, Chapter 34, problem 12
11. Giancoli, Chapter 34, problem 16