Oberlin College Physics 110, Fall 2011

Assignment 2

Wednesday, 14 September

Reading: Concerning problem solving: From the course website, read the links on "Study tips for introductory physics students," "Solving problems in physics," and "The whys and hows of physics problems." From the "Notes for Mechanics and Relativity," distributed on the first day of class, read appendix A, "A sample physics problem."

Concerning motion in a straight line: Finish reading HRW chapter 2 (Motion along a straight line), and read sections 2.1 through 2.6 (on motion and by Galileo) from the "Notes for Mechanics and Relativity."

Concerning motion in two and three dimensions: Read HRW chapters 3 (Vectors) and 4 (Motion in two and three dimensions). Omit section 3-8 on vector multiplication — we'll come back to it when we need it. This is a lot of reading but it's pretty straightforward. Emphasize sections 4-5 and 4-6, on projectile motion, and section 4-7, on circular motion.

Workshops: Review this week's Monday–Tuesday workshop material by reading the course notes, section 4.5, "Dimensions".

The Wednesday–Thursday lab workshop for this week is "Bouncing Ball" — for next week it is "Car Jump". Remember to read the lab workshop descriptions a day before going to the workshop meeting, and to send your instructor answers to the "warm up questions" in the workshop descriptions through BlackBoard.

Visiting Speaker: Our first visiting speaker of the year is Brian Arbic, Professor of Geological Studies at the University of Michigan, who will speak on "Predicting the Maelstrom: The Physics of the Ocean" at Wright 201 (our lecture hall) on Thursday 15 September at 4:30 pm. As mentioned in the syllabus, if you attend this talk and submit (through BlackBoard) a one-paragraph description by Monday, 19 September, you will earn 20 extra credit problem set points.

Informal Friday: The first optional Friday class meeting will be this Friday (16 September) at 9:00 am. Our own Professor Chris Martin will speak concerning "What does a Black Hole Eat? Radio Astronomy from Antarctica and Outer Space." The extra-credit rule applies to this talk also.

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Problems: Due Wednesday, 21 September.
Note: The numbered "additional problems" are in chapter 3 of the "Notes for Mechanics and Relativity" handed out on the first day of class. The problems labeled "HRW" are from the textbook by Halliday, Resnick, and Walker, ninth edition.

- HRW problem 2–6: *Bicycle speed record*
- Additional problem 19: *A fly and two trains*
- Additional problem 24: *Proton in motion*
- Additional problem 25: *Car vs. rattlesnake*
- Additional problem 26: *Bullet*
- Additional problem 28: *Starting and stopping*
- Additional problem 31: *The acceleration of gravity*
- Additional problem 32: *Dropped from Peters Hall*
- Additional problem 33: *Dropping time*
- HRW problem 2–68: *Salamander tongue*