

Week 1 Notes
Astro 1 (Discussion Section 105)

Department of Physics: University of California, Santa Barbara

Updated January 21, 2011

Class Overview

1. Name: Bill Wolf
2. Go over syllabus
3. Attendance Policy
4. Structure of Class

Review

Unit Conversions Perform the example of how many seconds there are in a year:

$$1 \text{ year} \times \frac{365 \text{ days}}{1 \text{ year}} \times \frac{24 \text{ hours}}{1 \text{ day}} \times \frac{60 \text{ minutes}}{1 \text{ hour}} \times \frac{60 \text{ seconds}}{1 \text{ minute}} = 3.15 \times 10^7 \text{ seconds}$$

Have students introduce each other to their neighbors and have them work on converting the speed of light from m/s to mph.

$$1 \text{ mile} = 1600 \text{ m} \quad c = 3 \times 10^8 \text{ m/s}$$
$$c = 3 \times 10^8 \text{ m/s} \times \frac{1 \text{ mile}}{1600 \text{ m}} \times \frac{3600 \text{ seconds}}{1 \text{ hours}} = 6.75 \times 10^8 \text{ mph}$$

Angles and Geometry Time permitting, go over angles and relevant conversions between degrees, minutes, and arcseconds, as well as basic geometric formulas for circles and spheres:

$$1^\circ = 60'$$

$$1' = 60''$$

$$C = 2\pi r \quad A = \pi r^2 \quad SA = 4\pi r^2 \quad V = \frac{4}{3}\pi r^3$$

Open Forum