

Due Tuesday, February 3, in recitation class

Problems from “Data Reduction and Error Analysis for the Physical Sciences” by Bevington and Robinson, 3rd Edition.

| Chapter/ Problem | Topic | Special Instructions and Hints |
|---------------------|-------------------------|--|
| 3.3 | Resistor | “Precision” means fractional uncertainty. |
| 3.4 | Exponential decay | |
| 3.6 | Doppler shift | |
| 3.7 | Chord/radius | The book’s formula is wrong. Derive the correct one first. |
| 3.8 | Speed of sound | Simple number crunching... if you know how. Consider carefully what the error on the mean is. It is not the standard deviation: see Eq. 4.14 |
| 3.9 | Poisson distribution | Make the requisite graph <i>by hand</i> neatly on graph paper (cf. §2.2). |
| 3.10 | Gaussian distribution | <u>Don’t</u> use numerical integration; use Appendix C (cf. §2.3). |
| 3.11 | Lorentzian distribution | Do a simple numerical integration using a spreadsheet. Also, it’s interesting to do the integral analytically and compare with the numerical integration (cf. §2.4). |