At the end of this chapter you should be able to

1. Identify what types of functions (or linear combinations thereof) can be used for linear least square fitting.
2. Identify the criteria for obtaining a least squares fit. (What is minimized?)
3. Derive the transformations for fitting data to $y = c_1 e^{c_2 x}$ and $y = c_1 x^{c_2}$.
4. Manually compute the R^2 statistic for a fit.
5. Form the overdetermined system of equations for a straight line or for a linear combination of basis functions, and form the matrices required for solution of the normal equations.

Note: Sections of Chapter 9 *not* covered (and hence, you are not responsible for) are 9.2.3 (QR factorization) and 9.3 (multivariate linear least-squares fitting)