Math 244, Homework Set 1

Homework problems in the text that have a blue computer mouse next to them means that they should be done on a computer. I'd like for you to start in Section 1.3, then we'll look at 1.2 and 1.1 using the Maple software (after day 1). The reading is for section 1.4, and is very short (a couple of pages), but well worth reading.

In summary, look at 1.3 and the reading (1.4) first, then we'll couple 1.1/1.2 with Maple.

DATE	Homework
Day 1	Section 1.3: 1, 3, 5, 7, 9, 14, 15, 17, 19, 21, 25 From Day 1 Lecture and Section 1.4: Be able to answer the following 1. What is a differential equation? 2. What is a mathematical model? 3. What is a *solution* to a differential equation? 4. What is an *equilibrium* solution? 5. How does a direction field help us find a solution to a differential equation? 6. Our authors state that there is always a trade off between two things when modeling. What are they? 7. Be sure you understand the definitions below (for the HW): • ordinary (versus partial) differential equations • constants (or parameters) versus independent variable versus dependent variable. • order of a DE • linear (vs nonlinear) DE • linearization 8. State the three important questions for a DE.
Days 2-3 (Using tech)	Section 1.1: 1,3,5, 7,8, 15-20, 22,23 Section 1.2: 1(a,b), 3, 8, 9, 15