

## 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. For Sect. 1.1, try them by hand (think of fast ways of drawing the direction fields).

DATE	Homework
Day 1	Section 1.1: 1,3,5, 7,8, 15-20, 22,23 Section 1.2: 1(a,b), 3, 8, 9, 15 Section 1.3: 1, 3, 5, 7, 9, 14, 15, 17, 19, 21, 25
Reading:	<ol style="list-style-type: none"><li>1. According to our authors, what is a differential equation?</li><li>2. What is a mathematical model?</li><li>3. What is a <i>solution</i> to a differential equation?</li><li>4. What is an <i>equilibrium</i> solution?</li><li>5. How does a direction field help us find a solution to a differential equation?</li><li>6. Our authors state that there is always a trade off between two things when modeling. What are they?</li><li>7. Be sure you understand the definitions below (for the HW):<ul style="list-style-type: none"><li>• ordinary (versus partial) differential equations</li><li>• constants (or parameters) versus independent variable versus dependent variable.</li><li>• order of a DE</li><li>• linear (vs nonlinear) DE</li><li>• linearization</li></ul></li></ol> <p>State the three important questions for a DE.</p>