

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">1. According to our authors, what is a differential equation?2. What is a mathematical model?3. What is a <i>solution</i> to a differential equation?4. What is an <i>equilibrium</i> 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):<ul style="list-style-type: none">• ordinary (versus partial) differential equations• constants (or parameters) versus independent variable versus dependent variable.• order of a DE• linear (vs nonlinear) DE• linearization <p>State the three important questions for a DE.</p>

DATE	Homework
Aug 29	Chapter 1 (See previous page)
Aug 31	Sect 2.1: 1-7 odd*, 13, 15, 16, 30, 33-36 Integration Practice sheet (separate) Maple Sheet (optional, see website) *-Direction fields on class website
Sep 03	Sect 2.2: 1-7 odd, 9*, 11*, 16*, 20* p. 49: 31, 35 (Read #30) *- Part (a) can be done by hand, use Maple for (b),(c)
Sep 05	Sect 2.3: 3, 5, 9, 10, 12, 13, 16, 23, 28 For 23, 28 do as much as you can by hand.
Sep 07	Finish up 2.1-2.3
Sep 10	Sect 2.4: 1, 3, 5, 7, 9, 13-15, 21, 22-25 p. 77: 27-29, 33
Sep 12	Sect 2.5: 1-7 odd, 8, 10, 11, 14, 15, 22-24 Fun, but optional: 25, 26
Sep 14	Sect 2.6: 1, 3, 4, 10, 13, 15, 17, 18, 19, 22
Sep 17	Catch up/Review
Sep 19	Exam 1
Sep 21	Sect 3.1: 1, 3, 10, 15-18, 20-24 Extra practice: Linear operators and Cramer's Rule Read over Section 3.2