

# MATH 226: Differential Equations

## Differential Equations

### Assignment 18

Due Friday, April 25

**Read** Section 7.4: “Predator-Prey Equations” of Chapter 7: *Nonlinear Differential Equations and Stability*

### Problems

Note: You may use MATLAB or Maple to find the eigenvalues and eigenvectors of the associated linear systems near the critical points. State these eigenpairs and the conclusions they allow you to draw. You may also use MATLAB or Maple to create the phase portraits.

#### 7.2 Almost Linear Systems

**Practice Problems:** 1\*, 3\*, 6\*, 10\*, 12\*, 13\*, 16\*, 25, 26

**Feedback Problems:** 12\*, 16\*, 25

#### 7.3 Competing Species

**Practice Problems:** 1, 3, 5, 10

**Feedback Problems:** 1, 3, 5, 10

