

## Midterm Number 2 - Review

Before I forget, you are NOT allowed any notes on the in-class portion of the exam.

Here is what I expect to be on the in-class portion of the exam on Thursday

- Finding eigenvalues and eigenvectors of  $2 \times 2$  matrix.
- Finding solutions to Linear System of Differential Equations (with real eigenvalues).
- Setting up a discrete dynamical system, like in 4.6.3
- Using Euler's method to find an approximation of  $y(t_2)$  given  $\frac{dy}{dt} = F(y)$ ,  $y(t_0)$ , and  $h$ .
- Use Table 5.3 to determine whether an equilibrium point is an attractor or repeller.
- The four equilibrium values on a quadratic population model (in 5.3)
- 5.3.3, 5.3.4, 5.6.3

Here is what I expect to be on the take home portion of the exam that will be due Monday.

- Finding solutions to Linear System of Differential Equations with complex eigenvalues will be on the take home part.
- 4.6.2, 5.2.2, 5.6.2, 6.2.3, 6.3.1, 6.4.1