MATH 286: EXAM 1 TOPICS AND PRACTICE PROBLEMS

- Some Basic Mathematical Models; Direction Fields (section 1.1): # 13, 17, 19
- Solutions of Some Differential Equations (section 1.2): # 2, 9, 11
- Classification of Differential Equations (section 1.3): # 1, 3, 5, 10, 14
- Linear Differential Equations; Method of Integrating Factor (section 2.1): # 3(c), 6(c), 24, 25, 29
- Separable Differential Equations (section 2.2): # 2, 5, 11, 19
- Modeling with First-Order Differential Equations (section 2.3): # 1, 2, 5, 12, 16
- Differences Between Linear and Nonlinear Differential Equations (section 2.4): # 1, 4, 5, 12, 18
- Autonomous Differential Equations and Population Dynamics (section 2.5): # 2, 8, 9, 10, 21
- Numerical Approximations: Euler’s method (section 2.4): # 1, 2
- Homogeneous Differential Equations with Constant Coefficients (section 3.1): # 1, 4, 7, 10, 13, 17, 21
- Solutions of Linear Homogeneous Equations; the Wronskian (section 3.2): # 1, 2, 7, 10, 14, 17, 19, 23
- General Theory of \(n\)th Order Differential Equations (section 4.1): # 5, 8, 10, 12