**Notre Dame University**

**MAT 235**

**Ordinary Differential Equations**

**Exam I**

**Wednesday July 13, ‏2016**

**Duration: 60 minutes**

**Name:**

**Section:**

**Instructor:**

**Grade:**

# **Directions:**

1. Calculators are **not** allowed.
2. Turn off your mobile phones.
3. **(12 points)** Determine the largest region of the -plane for which the differential equation



would have a unique solution whose graph passes through a point in the region.

1. **(12 points)** Determine whether the piecewise-defined function

is a solution of the initial-value problem

on .

1. **(14 points)** Solve the differential equation
2. **(18 points)** Solve the initial-value problem



1. **(20 points)** Solve the differential equation
2. **(24 points)** Solve the differential equation

