**Notre Dame University**

**MAT 235**

**Ordinary Differential Equations**

 **Exam II**

**Friday July 29, ‏2016**

**Duration: 60 minutes**

**Name:**

**Section:**

**Instructor:**

**Grade:**

# **Directions:**

1. Calculators are **not** allowed.
2. Turn off your mobile phones.

**Please note that you have 5 pages and 5 problems**

1. **(22 points)** Solve the differential equation
2. **(22 points)** Solve the differential equation
3. **(14 points)** Solve the differential equation

given that is a known solution.

**4) (24 points)**

 **a) (8 pts)** Find the inverse Laplace transform, 

**b) (8 pts)** Find the Laplace transform of the function

**c) (8 pts)** Use the **definition** to find the Laplace transformof the function

**5) (18 points)** Solve the following initial-value problem using Laplace transform.