

NAME:

NetID:

MATH 285 E1/F1 Exam 3 (A)

November 14, 2014

Instructor: Pascaleff

INSTRUCTIONS:

- Do all work on these sheets.
- Show all work.
- The exam is 50 minutes.
- Do not discuss this exam with anyone until after 3:00 pm on Nov. 14, 2014.

Problem	Possible	Actual
1	20	
2	20	
3	20	
4	20	
5	20	
Total	100	

ORTHOGONALITY FORMULAS

$$\int_{-L}^L \cos \frac{m\pi t}{L} \cos \frac{n\pi t}{L} dt = \begin{cases} 0, & m \neq n \\ L, & m = n \end{cases} \quad (1)$$

$$\int_{-L}^L \sin \frac{m\pi t}{L} \sin \frac{n\pi t}{L} dt = \begin{cases} 0, & m \neq n \\ L, & m = n \end{cases} \quad (2)$$

$$\int_{-L}^L \cos \frac{m\pi t}{L} \sin \frac{n\pi t}{L} dt = 0 \quad (3)$$

SOME INTEGRAL FORMULAS

$$\int u \cos u du = u \sin u + \cos u + C \quad (4)$$

$$\int u \sin u du = -u \cos u + \sin u + C \quad (5)$$

1. (20 points) Find the general solution of the differential equation

$$y' - 3y = xe^{3x}$$