

Department of Mathematics and Statistics  
University of Calgary

AMAT 311 L01  
Fall 2006

**Quiz 4a**

Monday, November 6, 16:00-16:50.  
Time: 30 min.

**Calculators are not allowed**

Name:.....

I agree that this paper may be placed at the front of the classroom for pick-up

Signature:.....

**Problem.** Consider the differential equation

$$y'' + 4y' + 4y = 0.$$

- 1/. [4 marks] Find two linearly independent solutions of this equation.
- 2/. [4 marks] Prove that the solutions obtained in 1/ are linearly independent by computing their Wronskian.
- 3/. [4 marks] Solve the initial value problem

$$y'' + 4y' + 4y = 0, \quad y(1) = 1, \quad y'(1) = -1.$$