

Quiz 2

MA 262
Artur's Class

2014/09/24

Problem 1

State the Existence and Uniqueness Theorem. (Hint: this is about a differential equation $dy/dx = f(x, y)$. It involves two conditions about f , and a certain kind of set in the plane \mathbb{R}^2 .)

Problem 2

Consider the differential equation $y' = 2y/x$.

- (a) Sketch the slope field.
- (b) Is the theorem satisfied at $(0, 0)$? (If no, why not.)
- (c) What about at $(0, 1)$?
- (d) What about at $(1, 1)$?

Problem 3

The Bernoulli equation is $y' + p(x)y = q(x)y^n$. Circle any non-linear terms.

Bonus

Write down your section number and write your name clearly.