Math 201, Assignment 2
Due at the beginning of tutorial on June 10, 2015
Illegible or disorganized solutions will receive no credit! Please, for the sake of our marker, be neat!

1) Use a substitution to solve the following differential equation.

$$\frac{dy}{dx} = 3x + y + 9x^2 + 6xy + y^2 - 15$$

2) Use a substitution to solve the following differential equation.

$$\frac{dx}{dt} + \frac{x}{t} = 3x^3$$

3) Use a substitution to solve the following differential equation.

$$xy' = xe^{-y/x} + y \quad x > 0$$

4) Solve the following "almost exact" differential equation by first finding an integrating factor.

$$(2xy^3 + y^4)dx + (xy^3 - 2)dy$$