

Math 202-Section 11 Quiz 1

Sr. Num.: ID. Num.: Name:

Q1: [5 points] Consider the first order ordinary differential equation:

$$2xydx + (x^2 - y)dy = 0.$$

Show that

$$-2x^2y + y^2 = c$$

is a one-parameter solution of the differential equation.

Q2: [5 points] Use Q1 to find an explicit solution of the following initial value problem:

$$\begin{aligned} 2xydx + (x^2 - y)dy &= 0, \\ y(1) &= -1. \end{aligned}$$