

Practice Quiz 5

MATH 2280, ORDINARY DIFFERENTIAL EQUATIONS, FALL 2023

NAME:

A#:

Problem 1. Chapter 6.5b Use the substitution appropriate to Bernoulli equations to find a general solution to the following:

$$\frac{dy}{dx} - \frac{3}{x} y = \left(\frac{y}{x}\right)^2$$

Solution:

Problem 2. Chapter 7.4a (10 points) The following differential equation is in exact form. Find a corresponding potential function and then find a general solution to the differential equation using that potential equation (even if it can be solved by simpler means).

$$(2xy + y^2 + [2xy + x^2]) \frac{dy}{dx} = 0$$

Solution: