

Quiz 6

MATH 2280, ORDINARY DIFFERENTIAL EQUATIONS, FALL 2023

NAME: Solution

A#: _____

Problem 1. Chapter 9 Ex2.c (10 points)

$$\frac{dy}{dx} = \frac{y}{x}$$

at

$$(x, y) = (1, 1), \left(\frac{3}{2}, 1\right), \left(1, \frac{3}{2}\right), \left(\frac{3}{2}, \frac{3}{2}\right)$$

Solution:

$$\frac{dy}{dx} = \frac{y}{x}$$

$$(1, 1) \Rightarrow \frac{dy}{dx} = \frac{1}{1} = 1$$

at

$$\left(\frac{3}{2}, 1\right) \Rightarrow \frac{dy}{dx} = \frac{1}{3/2} = \frac{2}{3}$$

$$\left(1, \frac{3}{2}\right) \Rightarrow \frac{dy}{dx} = \frac{3/2}{1} = \frac{3}{2}$$

$$\left(\frac{3}{2}, \frac{3}{2}\right) \Rightarrow \frac{dy}{dx} = \frac{3/2}{3/2} = 1$$

