

209 Math
1st semester 2017/2018
Worksheet 1

King Saud University
Collage of science
Department of Mathematics

Course Instructor: Reem Almahmud

Marks: 10

Instructions:

- Submit the answers by Tuesday the 19th /12/2017.
- Write your answers directly on the question sheet.
- There are 4 questions in 5 pages.

Student Name:

Student ID:

Section No: 25499

Serial No:

Official Use Only		
Question	Students Marks	Question Marks
1		5
2		5
Total		10

Q1: The following equation is a Bernoulli's equation

$$\frac{dy}{dx} = y(xy^3 - 1)$$

a) **Write** the appropriate substitution.

b) **Solve** the equation using the above substitution.

Q2: **Solve** the following **IVP**:

a) $y \frac{dy}{dx} + \sin x = 0, y(0) = 1.$

b) $x(x + 1) \frac{dy}{dx} + xy = 1, y(e) = 1.$

The end