

King Fahd University of Petroleum and Minerals  
Department of Mathematics and Statistics  
Math 260 (141) Sec 02 - Quiz 1

Name:

ID:

Serial No.:

1. Find the particular solution of the DE

$$\frac{dy}{dx} = \frac{xy + 2y - x - 2}{xy - y + x - 1}, \quad y(2) = 2$$

2. Find the general solution of the first order linear DE:

$$(1 + x^2) \frac{dy}{dx} - 2xy = (1 + x^2) \tan^{-1}(x)$$

3. The population of a town grows at a rate proportional to the population present at time  $t$ . The initial population of 2000 increases by 20% in 50 years. What will be the population in 100 years?