KFUPM – Math 202– Quiz 1

Name : ..... **ID** #.....Sec# ..... Serial #: .....

Question 1 [3 points]: Verify that $x(t) = \tan(t + c)$ is a one-parameter solutions of the ordinary differential equation:

$$x' = 1 + x^2.$$

Question 2 [3 points] Find a solution of the initial value problem:

$$x' = 1 + x^2, \quad x(0) = 1.$$

Question 2 [4 points]: Find all values of a and b that make the following initial value problem have a unique solution:

$$\frac{dy}{dx} = \frac{\sqrt{y^2 - 1}}{x^2 - 1}, \quad y(a) = b.$$