Math 204

Graded homework 1.1 Due Sunday 15/11/1436

Name:_____ Mark

Computer No.: _____

1. For each of the following differential equations state the order and determine whether it is linear or nonlinear

Equation	order	linearity
$(x^2-2)y'' + 12xy + 5y = \sin x$		
$y'''xy'' + (y')^4 + y^2 = 0$		
$\frac{d^2R}{dt^2} = -\frac{k}{R^2}$		

2. Verify that the function $y = 5\tan 5x$ is an explicit solution to the differential equation $y' = 25 + y^2$.

3. Verify that the family of functions $P = \frac{c_1 e^t}{1+c_1 e^t}$ is a solution of the differential equation $\frac{dP}{dt} = P(1-P)$.