Quiz 1: (2 possible points on Test 1)

January 20, 2014

1. (1 point) : What is the order of each differential equation?

(a)
\[e^{t} \left( \frac{dy}{dt} \right)^2 + \cos(t)y = \sin(t)\]

(b)
\[\frac{d^3y}{dt^3} + t^4 \frac{dy}{dt} = \cos(t)\]

2. (1 point) Is each differential equation linear or nonlinear?

(a)
\[\frac{d^4y}{dt^4} + e^t \frac{d^3y}{dt^3} + \sin^2(t) \frac{d^2y}{dt^2} + t^2 \frac{dy}{dt} = \cos(t)\]

(b)
\[\frac{dy \, d^2y}{dt \, dt^2} + ty = t\]