Math 4B, Summer 2016

Quiz 8

Name [**1 pt**]:_____ Perm number:_____

Section time: _____

1. Suppose a spring is horizontal and has one end attached to a wall and the other end attached to a $2kg$ mass. Suppose the friction constant is $6N \cdot s/m$, and it requires $10N$ to stretch the spring $2m$ beyond its equilibrium position.

   (a) Set up a differential equation that describes this system. Let $x(t)$ denote the displacement from its equilibrium position at time t.

   (b) Find the general solution of your differential equation.

   (c) Is this system underdamped, overdamped, or critically damped?