A mass weighing 2 pounds stretches a spring 6 inches beyond its natural length. At $t = 0$ the mass is released from a point 8 inches below the equilibrium position with an upward velocity of $\frac{4}{3}$ ft/s through a medium which offers a resistance to motion that is equivalent to one half of the instantaneous velocity. Determine a differential equation and initial conditions which model this motion at any time t. What is the long term behavior of this system?