Lesson 7.5

1. A mass attached to a vertical spring has position $y(t)$ meters after t seconds, where y satisfies $y'' = -0.25y$. Positions below equilibrium and downward motion are considered positive. Find the position function y if the initial position is -0.3 m and the initial velocity is 2 m/s.

2. Find the general solution to the differential equation $\frac{dy}{dt} = 0.125y$.

3. Find the general solution to the differential equation $5y'' - 10y = 0$.