Math 240 - Quiz 6

March 3, 2022
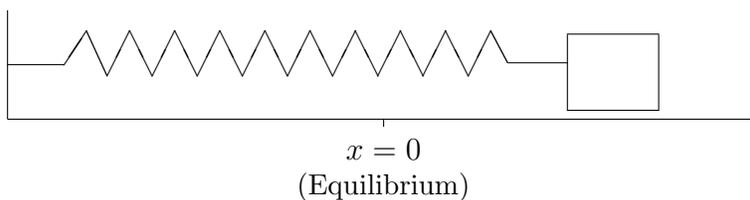
Name _____

Score _____

Show all work to receive full credit. Supply explanations when necessary. This quiz is due March 8.

1. (5 points) A 4-kg mass is attached to a spring with spring constant $4\,\text{N/m}$. The damping constant for the system is $1\,\text{N-sec/m}$. The mass is moved $1\,\text{m}$ to the left of equilibrium (compressing the spring) and pushed to the right with an initial speed of $1\,\text{m/sec}$. Find the equation of motion. Write your final result in terms of a single trig function with phase shift.

$$x = 0$$
(Equilibrium)

2. (5 points) Solve: $y'' - y' - 12y = 2x + 1 + 5e^x$