MATH 316 W06

DD1 Individual Quiz

1. **Keep problem**, but change current wording to, "A 2 kg mass is attached to a spring with a spring constant of 8 kg/s^2. The mass is displaced 1 m, and is then released from rest. There is no damping fluid within the system. After π seconds, the mass is struck by a hammer exerting and impulse force on the mass. Find the model that most accurately represents the scenario."

2. **Keep problem.**

3. **Keep problem.**

4. **Add**. $y\prime + 4y = \sin 3t, y(0) = 5$.

   (a) $y(t) = 5e^{-4t}$

   (b) $y(t) = -\frac{3}{25}\cos 3t + \frac{4}{25}\sin 3t + 5e^{-4t} \implies Correct$

   (c) $y(t) = -\frac{3}{25}\cos 3t + \frac{4}{25}\sin 3t$

   (d) $y(t) = \frac{3}{25}\cos 3t - \frac{4}{25}\sin 3t + 5e^{4t}$

5. **Previously problem 4.**

6. **Previously problem 5**, but the answer is keyed wrong. The correct answer is:

   (a) $y(t) = e^{-t} - e^{-5t} + \frac{e}{4}(e^{1-t} - e^{5-5t})u(t-1)$.