Homework Assignment #34
(due Nov. 16, 2020, 11pm, via gradescope)

1. Griffiths 7.1

2. Griffiths 7.3

   Hint: For (b) use that $I = -\frac{\mathrm{d}Q}{\mathrm{d}t}$

3. Griffiths 7.7

   Hints:

   - For (c) you will need to get a differential equation for $v_x(t)$. You get this DE by using $\mathbf{F}_{\text{net}} = m\mathbf{a} = m\frac{\mathrm{d}\mathbf{v}}{\mathrm{d}t}$

   - For (d) use $P = \frac{\mathrm{d}W}{\mathrm{d}t} = I^2 R$ and use your results of (a) and (c) and then use $W = \int \left(\frac{\mathrm{d}W}{\mathrm{d}t}\right) \mathrm{d}t$

4. Griffiths 7.8