Homework #13

10.1 #8, 16, 28, 33, 45

10.2 #4, 11, 19, 25

Hint for #25: There will be a curve sketching problem on the final, so I encourage you to sketch the curve on your own, and only use software or look in the back of the book as a check of your work. First observe that we can write $y = \frac{1}{2}\sin(2t)$. Thus, the y coordinate completes a period as t varies over an interval of length π, whereas x completes a period as t varies over an interval of length 2π. Hence the entire curve completes a period as t varies over an interval of length 2π, so that it suffices to sketch the curve over $0 \le t < 2\pi$.

Now follow the procedure of the example from class: find those t's in that interval where the tangent line to the curve is either horizontal or vertical, and the corresponding points on the curve. Plot all of these points, and sketch the curve using this information as well as the information about the crossing tangent lines at (0,0) you found in the first part of the problem.

10.3 #17, 54, 64

10.4 #6