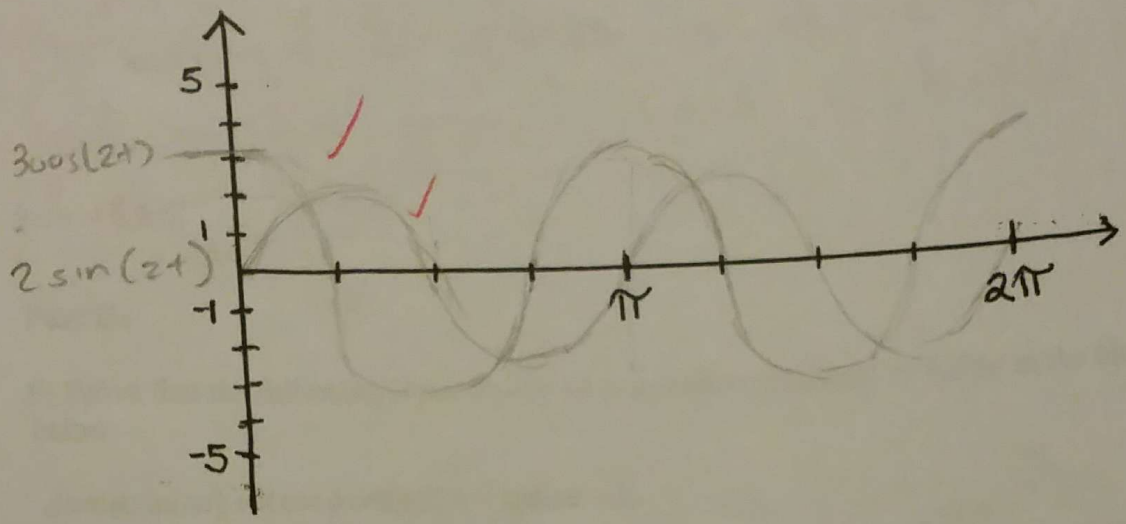
10/10

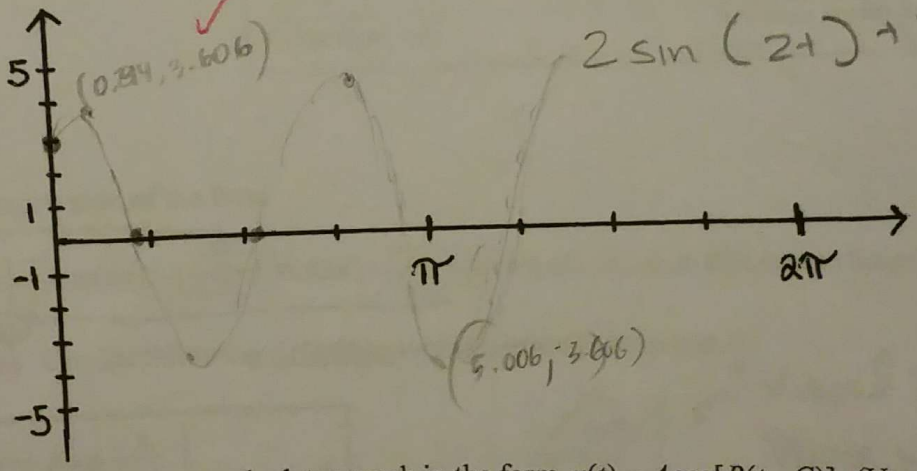
2) Graph the separate sine and cosine components of your function from (1) on the same set of axes. That is graph $x_1 = \frac{v_0}{\omega}\sin(\omega t)$ and $x_2 = x_0\cos(\omega t)$ on the set of axes below. (Sketch these graphs by hand and show two full cycles.)



2/2

3) Use a graphing calculator (or online graphing utility) to graph the entire function from part (1). Use the window settings indicated below. Sketch what you see on your calculator display.

xmin = 0
xmax = 2π
xscl = $\frac{\pi}{4}$
ymin = -5
ymax = 5
yscl = 1



8/8

4) Write an equation for your calculator graph in the form $x(t) = A\cos[B(t-C)]$. (Use the trace or maximum feature of your graphing utility to help you find values for A, B, and C. I expect to see decimal approximations for these values.)

A = 3.606
P = 3.436
C = .294
B = 1.999

$3.606\cos[1.99(t - .294)]$