

HINTS:

So, you're only looking at these hints because you tried really hard to solve the problems and got stuck. Right ?

- [6] If you set $\Delta x = \frac{\pi}{n}$, you will need to factor the argument of the sine to get $a + i\Delta x$ to appear.
You can avoid that by setting Δx to a different value, but you have to make a slightly different change to compensate as well.
- [8] Use the properties of definite integrals, geometry, and the relationship between definite integrals and areas.
- [9] Consider the bounds on $\sin x$ on the interval $\left[\frac{\pi}{6}, \frac{\pi}{2}\right]$.
- [11] Use the Fundamental Theorem of Calculus Part 1, and many theorems and definitions from Math 1A (applications of derivatives).
- [12] Use the Fundamental Theorem of Calculus Part 1, of course, and don't forget the chain and product rules.
Also, substitute $x = 1$ as soon as you get an expression for $g''(x)$ (no need to simplify $g''(x)$ first).
- [13] Differentiate both sides of the equation with respect to x .
- [15] Watch out for the change of sign in the velocity in part [b].
Use algebraic sign analysis on $v(t)$, like the algebraic sign analysis you did in Math 1A on $f'(x)$ or $f''(x)$ when you wanted to know where $f(x)$ was increasing/decreasing or concave up/down.
- [16] Use the properties of the definite integral, along with u -substitution.
And remember that the name of the variable in the integral is irrelevant in a definite integral.
- [17] Use the properties of definite integrals, geometry, the relationship between definite integrals and areas, and a powerful theorem from late in the chapter.