ECE312 HW #1

① (4 pts)

$$g(t) = \begin{cases} -1 & -1 \le t \le 0 \\ +1 & 0 \le t \le 1 \\ 0 & \text{otherwise} \end{cases}$$

(a) plot $g(t)$

(b) plot $g(t-1)$

(c) plot $g(t+2)$

(d) what is $\int_{-\infty}^{\infty} g(t)\,\delta(t-1/2)\,dt$?

② (2 points)

plot $\delta_2(t+2)$

③ (4 points)

use $g(t)$ from problem 1

(a) Amplitude scale by 2, then
time shift by 1, then
time scale by 4
plot the resultant function

(b) repeat (a), but reverse the order of the time shift and time scale

(c) compare (a) and (b). what do you conclude?