

ECE 312 HW #2 (Due 7 July)

① find at least 5 terms ($a_0, a_{-1}, a_{-2}, a_1, a_2$) of the complex fourier series for each of the following signals

(1 point) (a) $\cos 2\omega_0 t$

(1 point) (b) $\sum_{m=-\infty}^{\infty} \delta(t - 6m)$

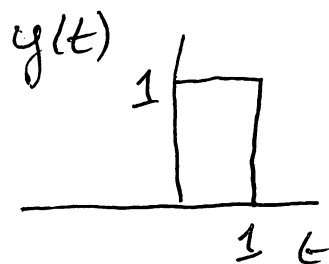
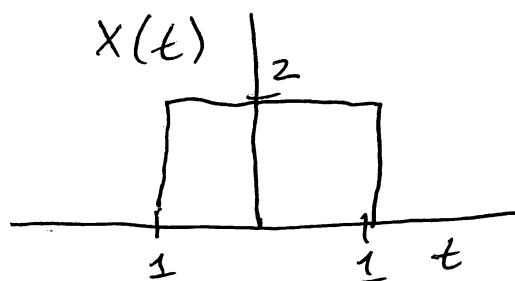
(1 point) (c) $\sum_{m=-\infty}^{\infty} \delta(t - m)$

② $\frac{d^2 y}{dt^2} + 3 \frac{dy}{dt} + 2y = 4 \frac{dy}{dt}$

(2 points) (a) find the transfer function $H(s)$

(3 points) (b) plot the frequency response $|H(j\omega)|$ and the phase response $\angle H(j\omega)$

③ Let



(3 points) (a) plot $x(t) * y(t)$

(2 points) (b) plot $x(t) * \delta(t)$