Tune-Up "Tuesday" #9 for November 9, 2017

(a) Define an interval of time t in [0, 5]
(b) Over the interval of time in part (a), define a $x_1(t)$ to be a rectangular pulse from 0 to 1s.
(c) Plot the rectangular pulse in (b)
(d) Convolve $x_1(t)$ with itself and only keep the result for the same interval of time as in (a).
(e) Plot the result in part (d).
(f) Over the interval of time in part (a), define a $x_2(t)$ to be a rectangular pulse from 0 to 2s.
(g) Plot $x_2(t)$.
(h) Convolve $x_1(t)$ and $x_2(t)$ and only keep the result for the same interval of time as in (a).
(i) Plot the result in (h)

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% (a) Define interval of time
Ts = 0.001;
t = 0 : Ts : 5;
% (b) Define rectangular pulse
x1 = rectpuls(t-0.5);
% (c) Plot rectangular pulse
figure;
plot(t, x1);
ylim( [-1.2, 1.2] );
% (d) Convolve x1 with itself
y1 = conv(x1, x1);
y1 = y1(1:length(t));
```