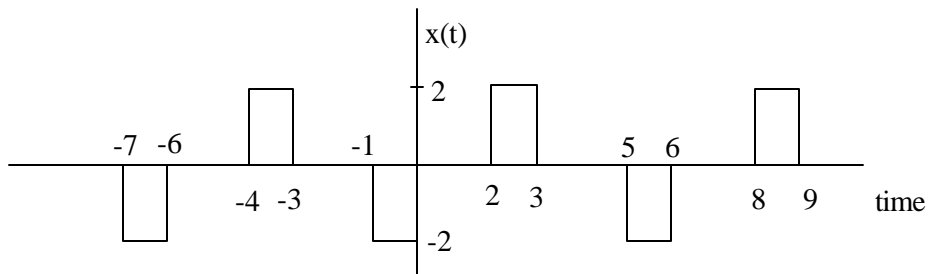


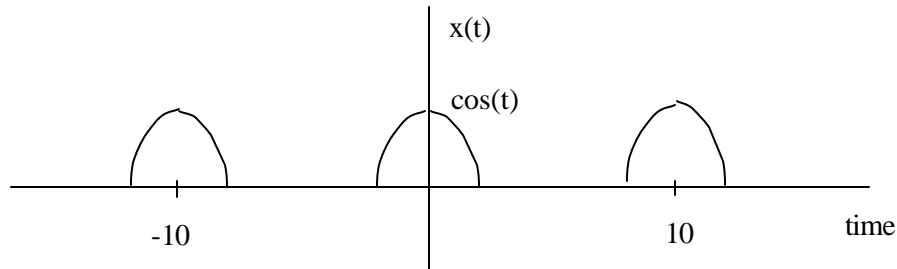
Fourier Series

1. For the following signal:



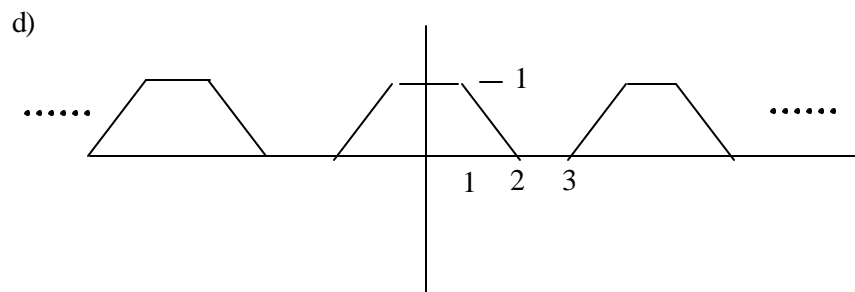
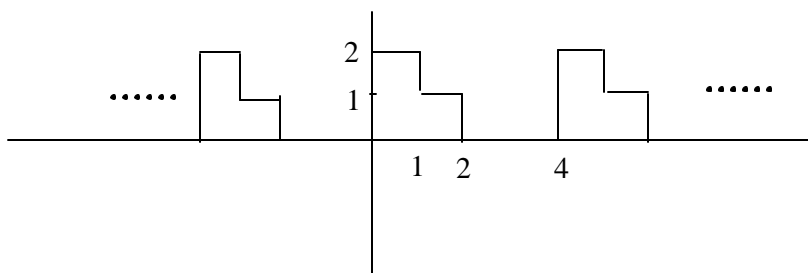
- Find the Fourier series
- Plot the spectra versus frequency, $\omega = n\omega_0$.

2. Repeat problem 1 for the following signal:



3. Compute the Fourier series for the following signals:

- $x(t) = 2 + 4\cos(50t + \pi/2) + 12\cos(100t - \pi/3)$
- $x(t) = 4\cos(2\pi(1000)t)\cos(2\pi(750000)t)$
-



4. For the signals given in Problem 3c) and 3 d), use Matlab to plot the truncated Fourier series for $N = 3$, $N = 10$ and $N = 40$. (Use subplot to save paper).
5. Find the Fourier series for the following signal. Also, sketch the approximation if a large number of terms are kept in the series (say $N=30$).

