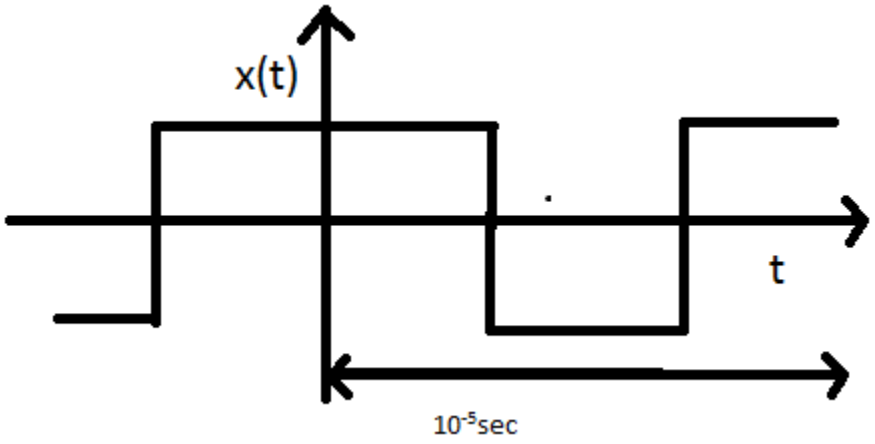
1) Find the Fourier series representation for the following

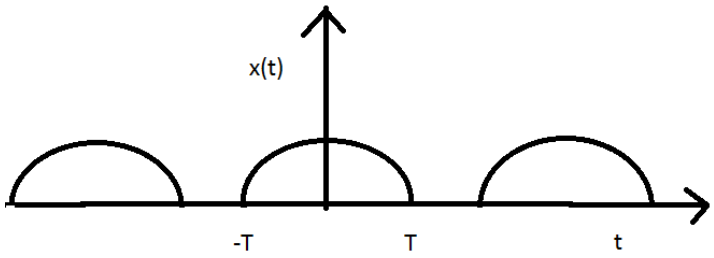


2) Find the trigonometric Fourier series for the exponential $e^{-t/2}$ over the interval $0 \le t \le \pi$

3) Find the Fourier series coefficients of the following signals
   a) $\cos^3 20\pi t$
   b) $\sin^3 6\pi t$ 10^{-5}sec
   c) $0.5e^{j100\pi t}$

4) Show that the Fourier series coefficients will yield the mean square error

5) MATLAB:
   a) Find the Fourier series coefficients of the half rectified sine wave
   b) Add the first 10 harmonics and show the output
   c) Add 50 harmonics and show the output. Keep on increasing the number of components and show that the resulting signal converges the



original signal