

1. Determine the Fourier series for the rectangular wave shown in the Figure. 1. and then express the series in the exponential form.

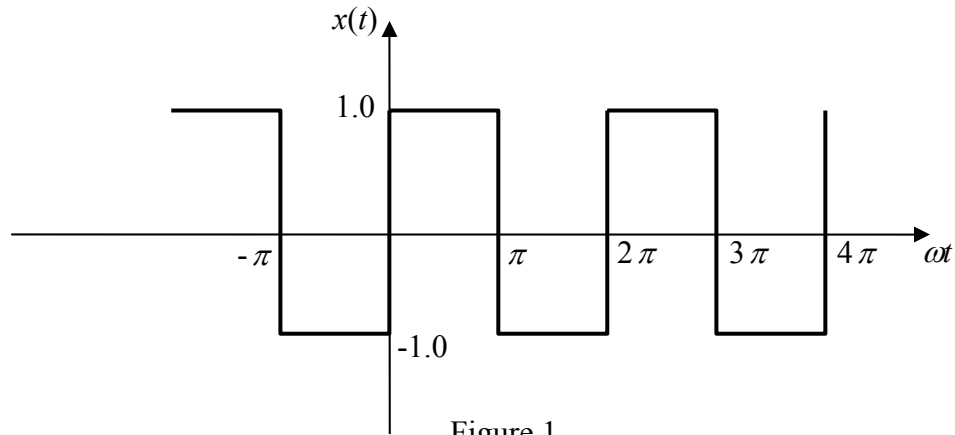


Figure 1

2. Consider the triangular wave shown in Figure 2.

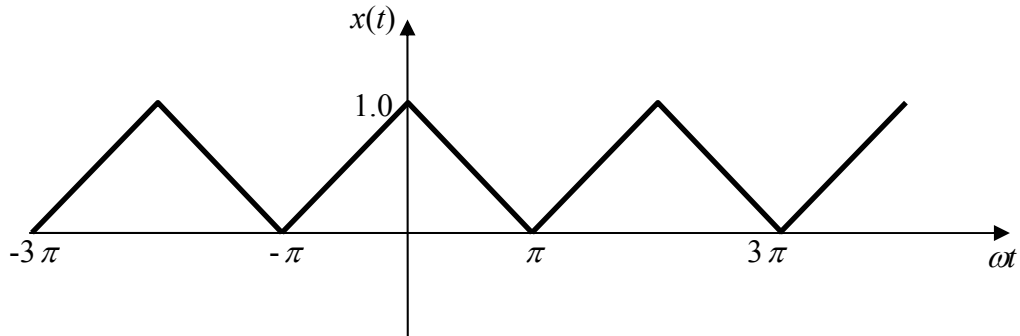


Figure 2

- Determine the Fourier series in terms of sin and cos functions.
- Determine the Fourier series in terms of the exponential function.
- Compare the two results.
- Plot the frequency spectrum.

3. For the sawtooth curve shown in the Figure. 3.

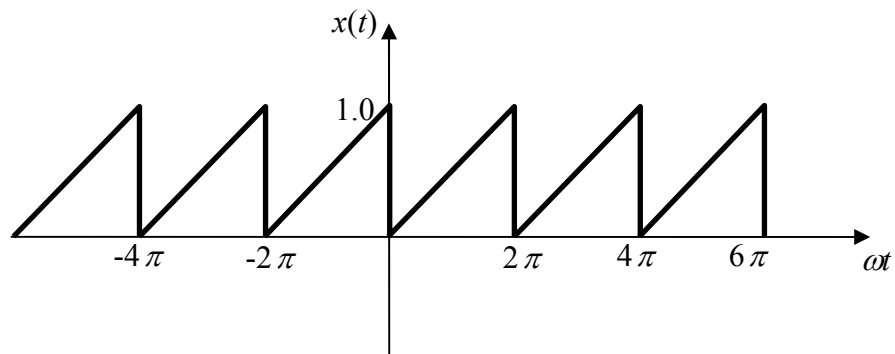


Figure 3

- a) Determine the Fourier series in terms sin and cos functions.
 - b) Express the Fourier series in the exponential form.
 - c) Compare the results.
4. A harmonic motion has a frequency of 10 cps and its maximum velocity is 4.57 m/s. Determine the following:
- a) The amplitude.
 - b) The period.
 - c) The maximum acceleration.