

Homework #1

Question 1

Draw graphs of the following showing two complete periods.

- A square wave of period $T=2.5$ ms and peak amplitude $A=3$ V
- A sawtooth wave of period $T=4$ ms and peak amplitude $A=2$ V
- A triangle wave of period $T=12.5$ ms and peak amplitude $A=1$ V

Calculate the frequencies of these waves.

Question 2

Draw a graph of two sinusoidal waves that have the same period ($T=2$ s) and amplitude ($A=0.5$ V) where the phase of the second wave is 90° ($\pi/2$ radians) behind the phase of the first.

Question 3

Sketch the waveform of a damped simple harmonic oscillator of (period $T=1$ s) for two complete oscillations.