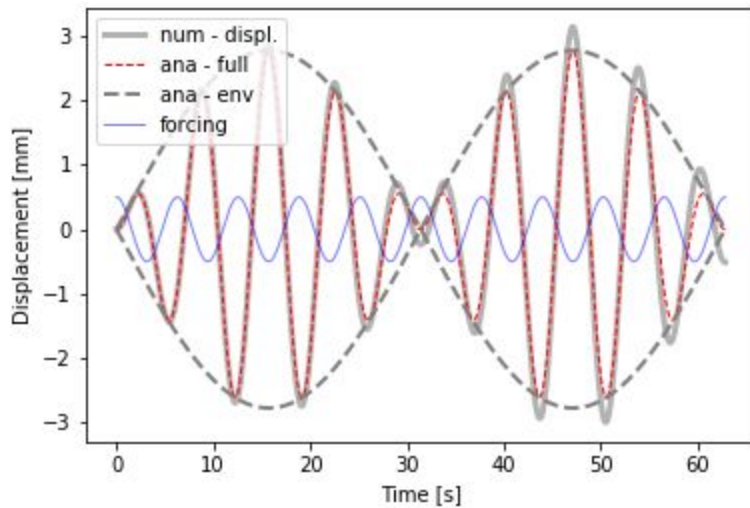


Problem 1:

In order to calculate the value of the 2 constants, I found the first and second derivative of the analytical solution given. After finding the constants, I was able to plug in the full analytical solution into the program. Upon running the oscillator for 60 seconds, the analytical envelope formed two sine waves. The analytical wave oscillated within the envelope. The forcing was much smaller than the analytical wave, but the total numerical displacement of the waves exceeded the envelope. The analytical wave and the forcing were slightly out of sync with each other, but the net numerical displacement from the oscillator was still bigger than the envelope.



Problem 2:

This oscillator shows a different shape. Rather than the sinusoidal shape of the last oscillator, this one appears to continue to increase in numerical displacement infinitely. The envelope is has a constant slope in both the positive and negative direction and the wave increases with amplitude alongside the envelope. The forcing for this oscillator is almost perfectly in sync with the analytical solution wave.

