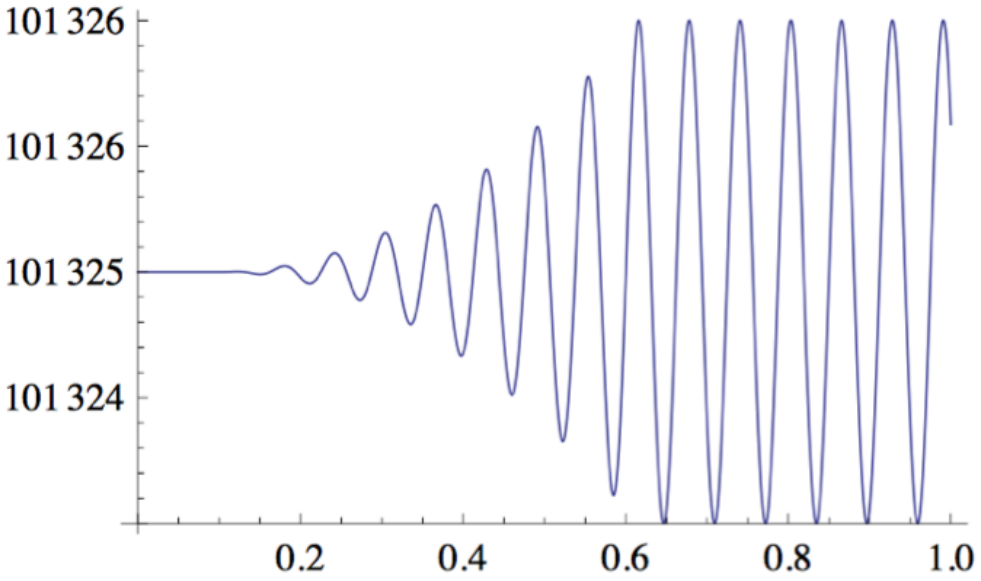
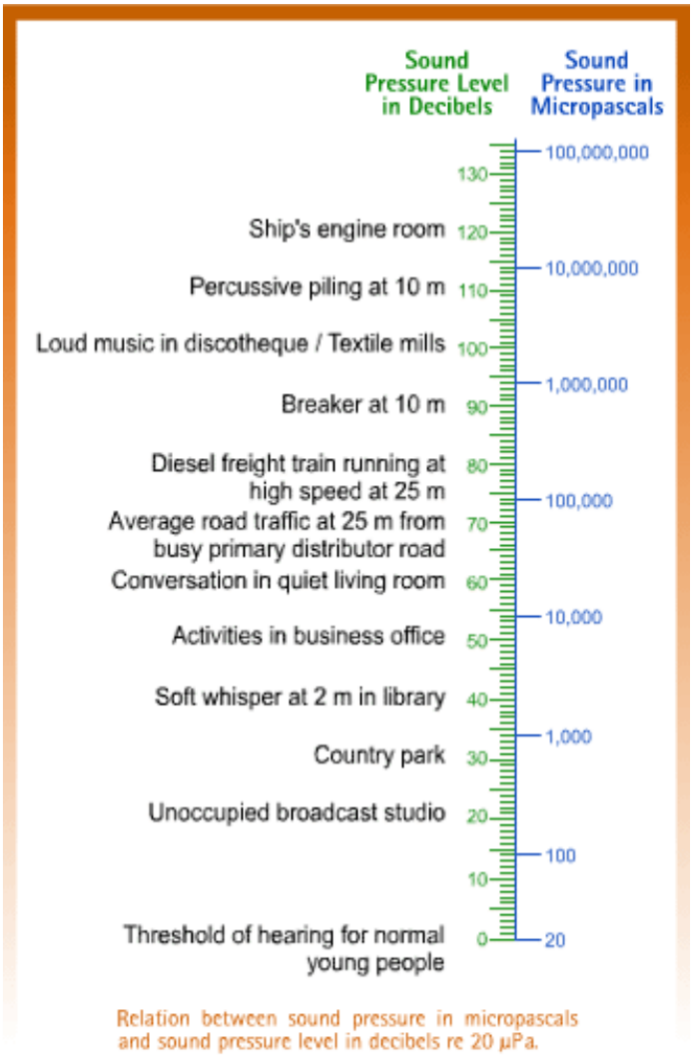
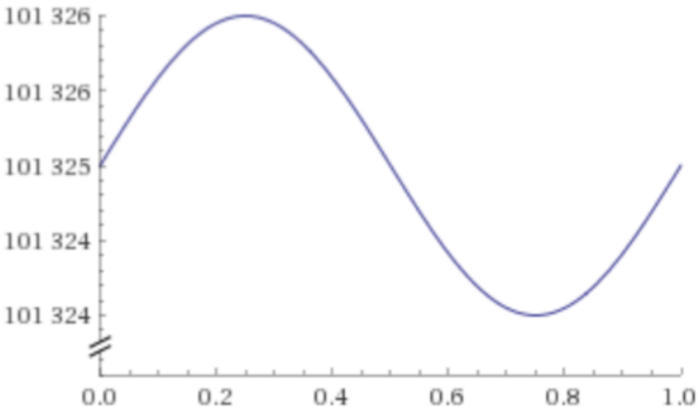
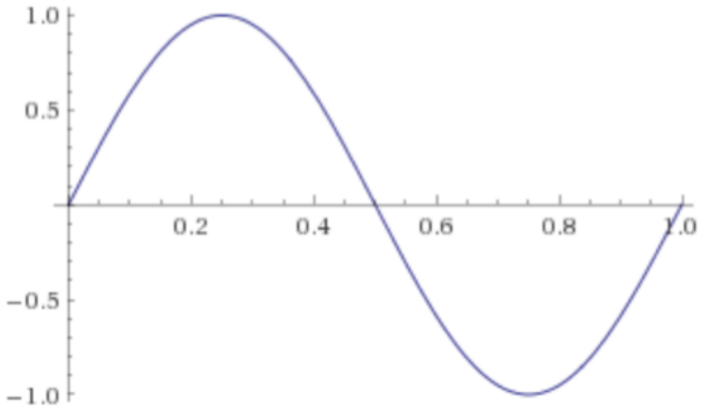


(a) A sound shown in terms of air pressure

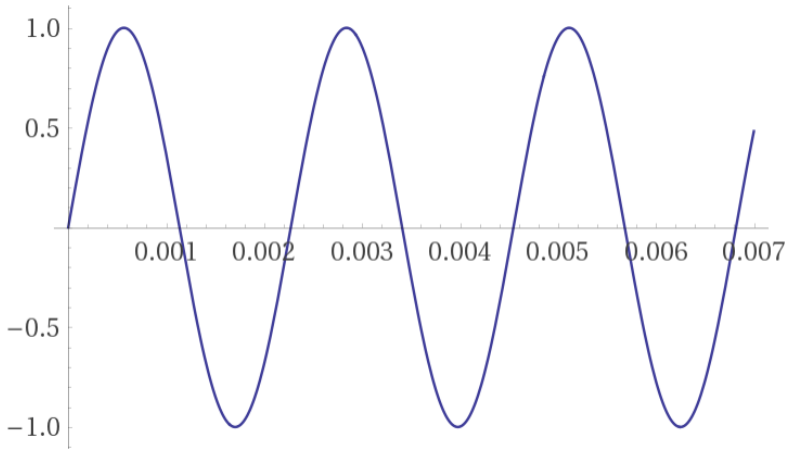



101 326
101 326
101 325
101 324
101 324
0.0
0.2
0.4
0.6
0.8
1.0

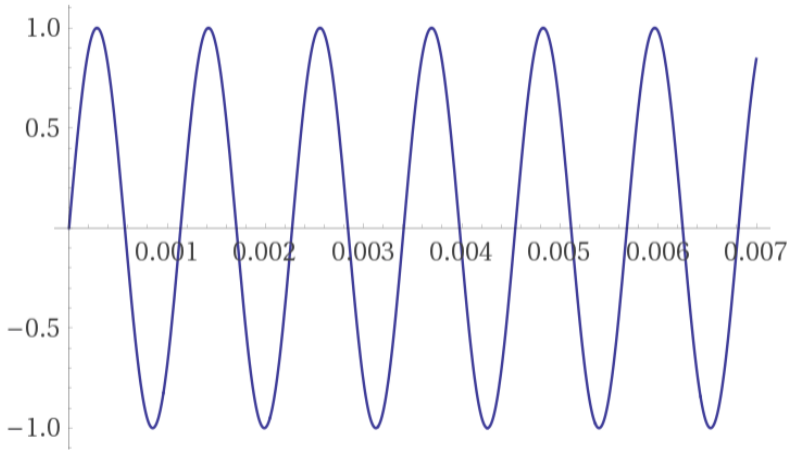

1.0
0.5
0.2
0.4
0.6
0.8
1.0
−0.5
−1.0

Ex (Superposition)

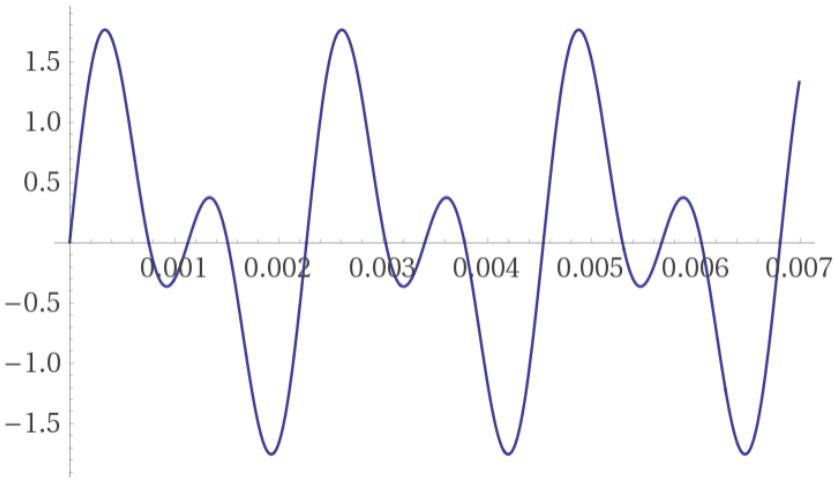
$\sin(2\pi \times 440t)$, $f = 440\,Hz$



$\sin(2\pi \times 880t)$, $f = 880\,Hz$

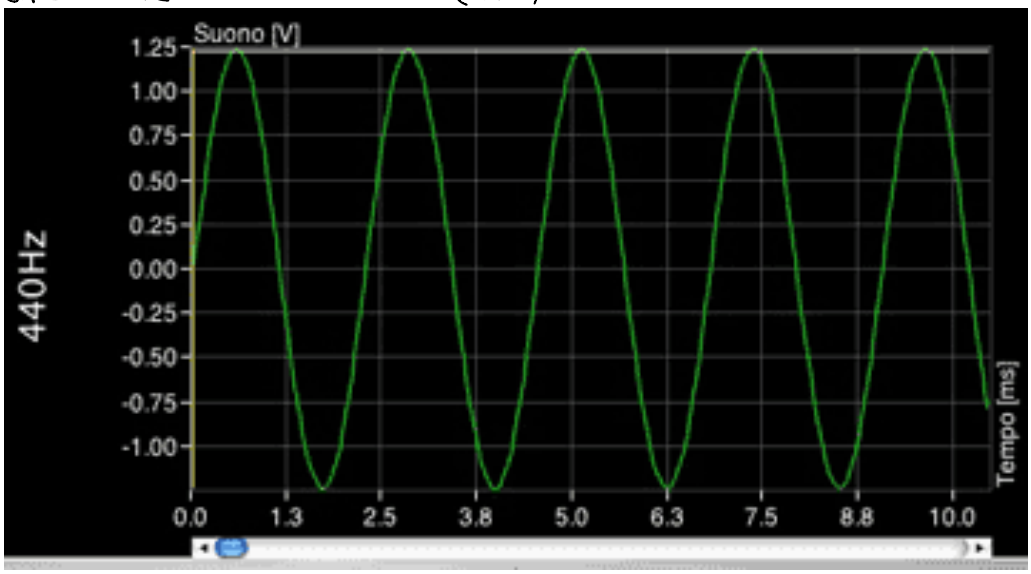


$\sin(2\pi \times 440t) + \sin(2\pi \times 880t)$

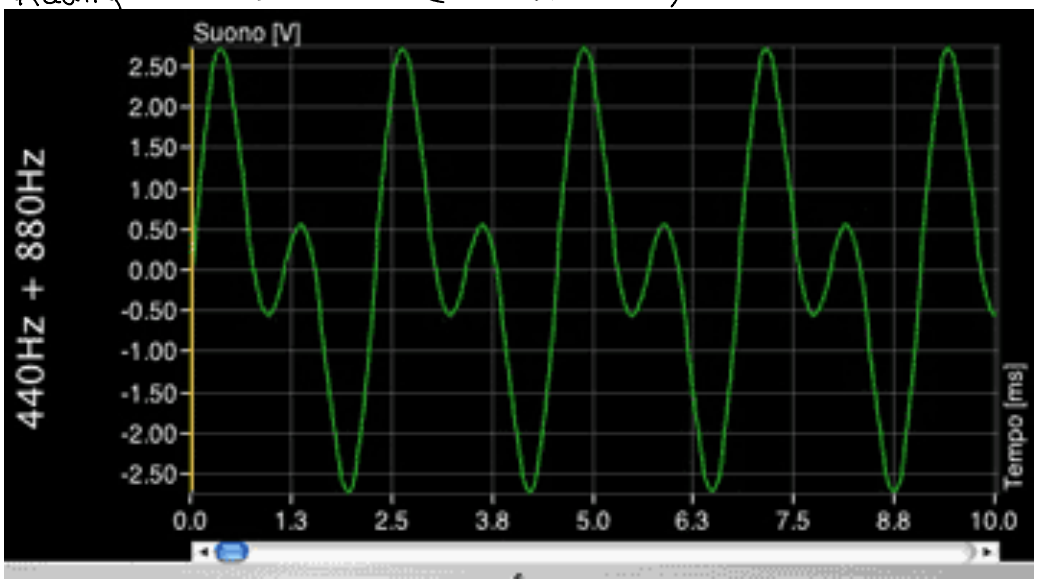


Ex Start w/ pure tone & add harmonics/overtones

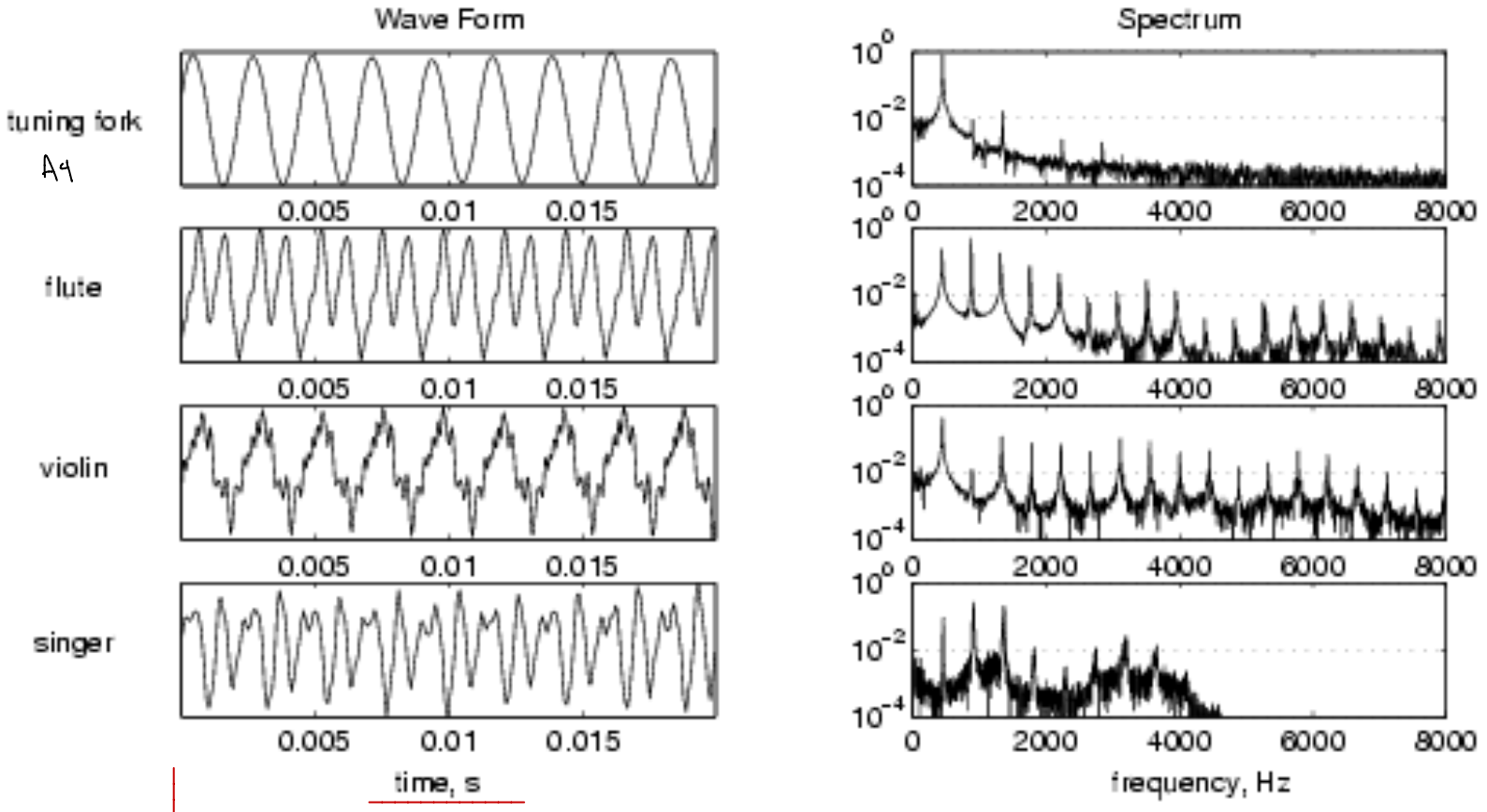
Pure tone - f = 440 Hz (A4)



Adding 2nd harmonic (880 Hz A5)



Adding 3rd Harmonic (1320 Hz E6)



We will see how to determine the frequencies in the signals on the left to get a graph like the one on the right

Instrument sounds are programmed by trying to replicate these wave forms.