Ph 20 Assignment 1

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1 Lissajous Figures

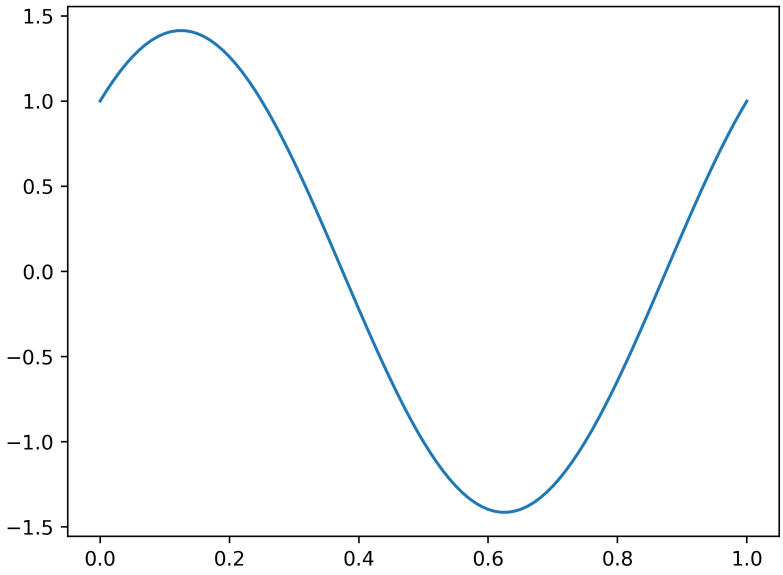

Figure 1: Lissajous figures for integer frequency ratios. Across rows and then down columns, the x:y frequency ratios are 1:1, 1:2, 1:3, and 1:4 respectively. The ratio $\frac{f_y}{f_x}$ gives the number of peaks (or equivalently the number of troughs) on the graph for one oscillation in X (i.e. one "peak" on the right side and one "peak" on the left). The figures shown here correspond to the parameters $A_x = A_y = 1, \Phi = \frac{\pi}{4}, \Delta t = 0.001,$ and $N = 1000$.

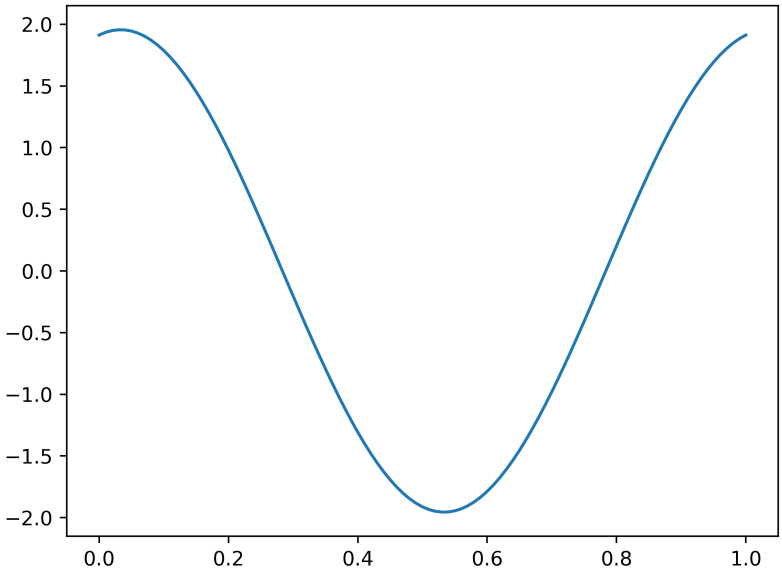

Figure 2: Lissajous figures for integer frequency ratios. Across rows and then down columns, the x:y frequency ratios are 1:1, 1:2, 1:3, and 1:4 respectively. The ratio $\frac{f_y}{f_x}$ gives the number of peaks (or equivalently the number of troughs) on the graph for one oscillation in X (i.e. one "peak" on the right side and one "peak" on the left). The figures shown here correspond to the parameters $A_x = A_y = 1, \Phi = \frac{\pi}{4}, \Delta t = 0.001,$ and $N = 1000$.

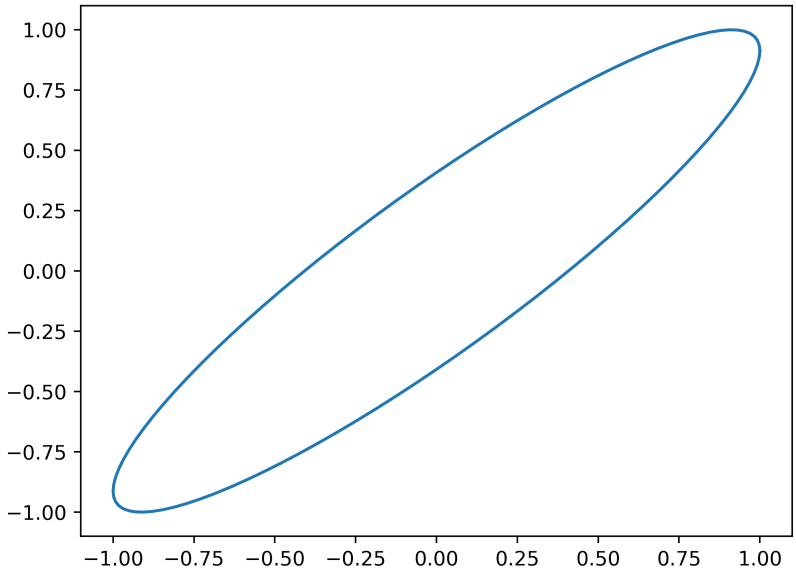

Figure 3: Lissajous figures for integer frequency ratios. Across rows and then down columns, the x:y frequency ratios are 1:1, 1:2, 1:3, and 1:4 respectively. The ratio $\frac{f_y}{f_x}$ gives the number of peaks (or equivalently the number of troughs) on the graph for one oscillation in X (i.e. one "peak" on the right side and one "peak" on the left). The figures shown here correspond to the parameters $A_x = A_y = 1, \Phi = \frac{\pi}{4}, \Delta t = 0.001,$ and $N = 1000$.