1. Consider $f(t) = \sin(20t)$ for $t \in [0, 2\pi]$.

What is a good sampling range to make a plot of $f$ for $t \in [0, 2\pi]$? Justify.

For general $n$, give a good range for $t$ to plot $\sin(nt)$ over $[0, 2\pi]$.

2. Give all commands to create a sparse 100-by-50 matrix $A$ for which $\text{spy}(A)$ shows