Practice Problems - Session 2

# Task 1: Signal Plotting

- Plot the following discrete signals in Octave:  
 \* x[n] = sin(0.1πn)  
 \* x[n] = cos(0.2πn)  
 \* x[n] = 0.8^n for n = 0 to 30

# Task 2: Signal Manipulation

- Plot time-shifted versions of x[n] = cos(0.2πn):  
 \* x[n−3]  
 \* x[n+4]  
- Plot downsampled version of x[n] = sin(0.1πn): x[2n]

# Task 3: Symmetry Check

- Create a custom signal:  
 x = [1 2 3 4 3 2 1]; n = -3:3;  
- Determine and plot:  
 \* Even component  
 \* Odd component  
- Verify: x[n] = even[n] + odd[n]