Session 3: Practice Problems and Tasks

1. Define the signals:

* - x[n] = [1 2 3 4]  
   - h[n] = [1 -1]

1. a) Compute y[n] = x[n] + h[n] (pad h[n] as needed)
2. b) Compute element-wise multiplication of x[n] and h[n] (with proper alignment)
3. c) Compute 3 \* x[n]

2. Convolution Tasks:

1. a) Manually compute the convolution of x[n] = [1 2 1] and h[n] = [1 0 -1]
2. b) Implement the convolution in Octave and plot the result.

3. Conceptual Questions:

1. a) Is convolution commutative? Prove using two example signals.
2. b) Explain how convolution relates to system response.