1. Write Matlab code to plot the following figures:



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• This assignment is for practice to prepare for second major exam

- 2. Write Matlab code to compute both the linear and circular convolutions of the shown two discrete-time functions:
  - (a)









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4. Compute the DFT of the two signals below and show how to increase the resolution of the spectra by 8 folds.

- 5. Consider the continuous-time periodic signals given as:  $x1(t) = [u(t-1)-u(t-3)] cos(2\pi t/3)$ .
  - a. Plot the signal and its Fourier transform using symbolic math.
  - b. Sample this signal with sampling period of 0.1 and plot the sampled signal and its DFT.
  - c. Sample this signal with sampling period of 1 and plot the sampled signal and its DFT.
  - d. Sample this signal with sampling period of pi/2 and plot the sampled signal and its DFT.
- 6. Compute and plot the continuous Fourier transform of the following signals:
  - a.  $x(t) = e^{-t} \exp(j 10\pi t) u(t)$
  - b. x(t) = sinc (100 t)

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