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| 國立臺中科技大學-資工二 訊號與系統 第七次作業 |

若數位訊號為：

脈衝響應為：

1. 求全卷積與卷積的運算，並繪製其結果。

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| import numpy as np  import matplotlib.pyplot as plt  x=np.array([1,2,4,3,2,1,1])  h=np.array([1,2,3,1,1])  y=np.convolve(x,h,'full')  y1=np.convolve(x,h,'same')  y2=np.convolve(x,h,'valid')  print('x=',x)  print('full convolution',y)  print('convolution y=',y1)  plt.figure(1)  plt.stem(y) |
| x= [1 2 4 3 2 1 1]  full convolution [ 1 4 11 18 23 20 16 10 6 2 1]  convolution y= [11 18 23 20 16 10 6] |

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| x= [1 4 2 1 3]  full convolution [ 1 6 11 9 7 7 3]  convolution y= [ 6 11 9 7 7] |

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1. 求全卷積與卷積的運算，並繪製其結果。stem

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| --- |
| import numpy as np  import matplotlib.pyplot as plt  x=np.array([1,1,4,4,2])  h=np.array([1,0,-1])  y=np.convolve(x,h,'full')  y1=np.convolve(x,h,'same')  y2=np.convolve(x,h,'valid')  print('x=',x)  print('full convolution',y)  print('convolution y=',y1)  plt.figure(1)  plt.stem(y) |