**HOMEWORK 11**

[1] Show that the z-transform of the third-order exponential signal  is

specified by



จากสูตร 

หา 



จะได้



[2] Let the sequence  have its elements specified by



, where  is a sequence with the z-transform . Show that



จาก



จากสมการ จะได้



ใช้ delay property 



[3] Determine the Fourier transform of the sequence of the sequence



Compute the following entities without explicitly using 

[3.1]  [3.2]  [3.3] phase angle of ; that is, 

[3.4]  [3.5] 

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[4] Determine the inverse Fourier transforms of the following function of 



จาก 

[5] Determine the sequence associated with the Fourier transform specified as



จาก 



[6] Determine the four-point discrete Fourier transform of the sequence given by



จาก 

หา 4 point จะได้ 









[7] Using the fact that the discrete Fourier coefficient sequence  can be interpreted as a periodic sequence of period N , verify the following identity the periodic Kronecker delta sequence



, which holds for all integer values of n

[8] Determining the four-point discrete Fourier transform of the sequence {1,3, 2,1} and showing that the Parseval’s relationship holds in term of energy relationship given by



จาก 

หา 4 point จะได้ 









จาก Parseval’s relationship





[9] An ideal low-pass filter with cutoff frequency  has the frequency



Determine the weighting sequence associated with this filter using the inverse Fourier transform defined by



Furthermore, determine the energy in this weighting sequence using Parseval’s identity.

จาก Parseval’s identity





[10] An ideal zero-phase high-pass filter with cutoff frequency  has the frequency response



Determine the weighting sequence associated with this filter using the inverse Fourier

transform defined by



Furthermore, determine the energy in this weighting sequence using Parseval’s identity.

