Taylor Larrechea

Dr. Gustafson

Math 362 Fourier Analysis

September 8, 2017

2.4 HW

Section 2.4



2.4.12

|  |  |
| --- | --- |
| Input | Output |
| a.)  >> AliasingTwoCosines(8,10,2,1,1)  fN =  1.0000  0.0000  -1.0000  -0.0000  1.0000  -0.0000  -1.0000  -0.0000  gN =  1.0000  0.0000  -1.0000  -0.0000  1.0000  0.0000  -1.0000  -0.0000 |  |

|  |  |
| --- | --- |
| b.)  >> AliasingTwoCosines(8,10,2,1,1)  fN =  1.0000  0.0000  -1.0000  -0.0000  1.0000  0.0000  -1.0000  -0.0000  gN =  1.0000  0.0000  -1.0000  -0.0000  1.0000  0.0000  -1.0000  -0.0000  >> hold on  >> f=cos(2\*pi\*10\*t);  >> plot(t,f)  >> hold on  >> g=cos(2\*pi\*2\*t);  >> plot(t,g) |  |

c.)

does alias down to due to the nodes values of being equal.

2.4.23



|  |  |
| --- | --- |
| c.)  = [0.0000, 1.0000, 0.0000, -1.0000, -0.0000, 1.0000, 0.0000, -1.0000, -0.0000, 1.0000, -0.0000, -1.0000, -0.0000, 1.0000, 0.0000, -1.0000]  = [0, 1.0000, 0.0000, -1.0000, -0.0000, 1.0000, 0.0000, -1.0000, -0.0000, 1.0000, 0.0000, -1.0000, -0.0000, 1.0000, 0.0000, -1.0000] |  |
| d.)  >> AliasingTwoSines(16,20,4,1,1)  >> hold on  >> f=sin(2\*pi\*20\*t)  >> plot(t,f)  >> hold on  >> g=sin(2\*pi\*4\*t)  >> plot(t,g) |  |