MATLAB

1.a)

n =

Columns 1 through 12

0 1 2 3 4 5 6 7 8 9 10 11

Columns 13 through 20

12 13 14 15 16 17 18 19

>> x=(1/2).^n

x =

Columns 1 through 7

1.0000 0.5000 0.2500 0.1250 0.0625 0.0312 0.0156

Columns 8 through 14

0.0078 0.0039 0.0020 0.0010 0.0005 0.0002 0.0001

Columns 15 through 20

0.0001 0.0000 0.0000 0.0000 0.0000 0.0000

>> h=[0.1667, 0.1667, 0.1667, 0.1667,0.1667, 0.1667, 0,0,0,0,0,0,0,0,0,0,0,0,0,0]

h =

Columns 1 through 7

0.1667 0.1667 0.1667 0.1667 0.1667 0.1667 0

Columns 8 through 14

0 0 0 0 0 0 0

Columns 15 through 20

0 0 0 0 0 0

>> subplot(2,1,1);stem(n,x);subplot(2,1,2);stem(n,h);

(b)