Question no. 2
Values of w**-(n*k)
where w = e^(2*pi/N), N = 16, range of n, k is [0, 16)

for n = 0
(1+0j)
(1+0j)
(1+0j)
(1+0j)
(1+0j)
(1+0j)
(1+0j)
(1+0j)
(1+0j)
(1+0j)
(1+0j)
(1+0j)
(1+0j)
(1+0j)
(1+0j)

for n = 1
(1+0j)
(0.9239-0.3827j)
(0.7071-0.7071j)
(0.3827-0.9239j)
(-0-1j)
(-0.3827-0.9239j)
(-0.7071-0.7071j)
(-0.9239-0.3827j)
(-1+0j)
(-0.9239+0.3827j)
(-0.7071+0.7071j)
(-0.3827+0.9239j)
(0.+1j)
(0.3827+0.9239j)
(0.7071+0.7071j)
(0.9239+0.3827j)

for n = 2
(1+0j)
(0.7071-0.7071j)
(-0-1j)
(-0.7071-0.7071j)
(-1+0j)
(-0.7071+0.7071j)
(0.+1j)
(0.7071+0.7071j)
(1-0j)
(0.7071-0.7071j)
(-0-1j)
(-0.7071-0.7071j)
(-1+0j)
(-0.7071+0.7071j)
(0.+1j)
(0.7071+0.7071j)

for n = 3
(1+0j)
(0.3827-0.9239j)
(-0.7071-0.7071j)
(-0.9239+0.3827j)
(0.+1j)
(0.9239+0.3827j)
(0.7071-0.7071j)
(-0.3827-0.9239j)
(-1+0j)

```
        (-0.3827+0.9239j)
        (0.7071+0.7071j)
        (0.9239-0.3827j)
        (-0-1j)
        (-0.9239-0.3827j)
        (-0.7071+0.7071j)
        (0.3827+0.9239j)

for n = 4
        (1+0j)
        (-0-1j)
        (-1+0j)
        (0.+1j)
        (1-0j)
        (-0-1j)
        (-1+0j)
        (0.+1j)
        (1-0j)
        (-0-1j)
        (-1+0j)
        (0.+1j)
        (1-0j)
        (-0-1j)
        (-1+0j)
        (0.+1j)

for n = 5
        (1+0j)
        (-0.3827-0.9239j)
        (-0.7071+0.7071j)
        (0.9239+0.3827j)
        (-0-1j)
        (-0.9239+0.3827j)
        (0.7071+0.7071j)
        (0.3827-0.9239j)
        (-1+0j)
        (0.3827+0.9239j)
        (0.7071-0.7071j)
        (-0.9239-0.3827j)
        (0.+1j)
        (0.9239-0.3827j)
        (-0.7071-0.7071j)
        (-0.3827+0.9239j)

for n = 6
        (1+0j)
        (-0.7071-0.7071j)
        (0.+1j)
        (0.7071-0.7071j)
        (-1+0j)
        (0.7071+0.7071j)
        (-0-1j)
        (-0.7071+0.7071j)
        (1-0j)
        (-0.7071-0.7071j)
        (0.+1j)
        (0.7071-0.7071j)
        (-1+0j)
        (0.7071+0.7071j)
        (-0-1j)
        (-0.7071+0.7071j)

for n = 7
        (1+0j)
        (-0.9239-0.3827j)
        (0.7071+0.7071j)
        (-0.3827-0.9239j)
        (0.+1j)
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```
        (0.3827-0.9239j)
        (-0.7071+0.7071j)
        (0.9239-0.3827j)
        (-1+0j)
        (0.9239+0.3827j)
        (-0.7071-0.7071j)
        (0.3827+0.9239j)
        (-0-1j)
        (-0.3827+0.9239j)
        (0.7071-0.7071j)
        (-0.9239+0.3827j)

for n = 8
        (1+0j)
        (-1+0j)
        (1-0j)
        (-1+0j)
        (1-0j)
        (-1+0j)
        (1-0j)
        (-1+0j)
        (1-0j)
        (-1+0j)
        (1-0j)
        (-1+0j)
        (1-0j)
        (-1+0j)
        (1-0j)
        (-1+0j)

for n = 9
        (1+0j)
        (-0.9239+0.3827j)
        (0.7071-0.7071j)
        (-0.3827+0.9239j)
        (-0-1j)
        (0.3827+0.9239j)
        (-0.7071-0.7071j)
        (0.9239+0.3827j)
        (-1+0j)
        (0.9239-0.3827j)
        (-0.7071+0.7071j)
        (0.3827-0.9239j)
        (0.+1j)
        (-0.3827-0.9239j)
        (0.7071+0.7071j)
        (-0.9239-0.3827j)

for n = 10
        (1+0j)
        (-0.7071+0.7071j)
        (-0-1j)
        (0.7071+0.7071j)
        (-1+0j)
        (0.7071-0.7071j)
        (0.+1j)
        (-0.7071-0.7071j)
        (1-0j)
        (-0.7071+0.7071j)
        (-0-1j)
        (0.7071+0.7071j)
        (-1+0j)
        (0.7071-0.7071j)
        (0.+1j)
        (-0.7071-0.7071j)

for n = 11
        (1+0j)
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```
        (-0.3827+0.9239j)
        (-0.7071-0.7071j)
        (0.9239-0.3827j)
        (0.+1j)
        (-0.9239-0.3827j)
        (0.7071-0.7071j)
        (0.3827+0.9239j)
        (-1+0j)
        (0.3827-0.9239j)
        (0.7071+0.7071j)
        (-0.9239+0.3827j)
        (-0-1j)
        (0.9239+0.3827j)
        (-0.7071+0.7071j)
        (-0.3827-0.9239j)

for n = 12
        (1+0j)
        (0.+1j)
        (-1+0j)
        (-0-1j)
        (1-0j)
        (0.+1j)
        (-1+0j)
        (-0-1j)
        (1-0j)
        (0.+1j)
        (-1+0j)
        (-0-1j)
        (1-0j)
        (0.+1j)
        (-1+0j)
        (-0-1j)

for n = 13
        (1+0j)
        (0.3827+0.9239j)
        (-0.7071+0.7071j)
        (-0.9239-0.3827j)
        (-0-1j)
        (0.9239-0.3827j)
        (0.7071+0.7071j)
        (-0.3827+0.9239j)
        (-1+0j)
        (-0.3827-0.9239j)
        (0.7071-0.7071j)
        (0.9239+0.3827j)
        (0.+1j)
        (-0.9239+0.3827j)
        (-0.7071-0.7071j)
        (0.3827-0.9239j)

for n = 14
        (1+0j)
        (0.7071+0.7071j)
        (0.+1j)
        (-0.7071+0.7071j)
        (-1+0j)
        (-0.7071-0.7071j)
        (-0-1j)
        (0.7071-0.7071j)
        (1-0j)
        (0.7071+0.7071j)
        (0.+1j)
        (-0.7071+0.7071j)
        (-1+0j)
        (-0.7071-0.7071j)
        (-0-1j)
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```
        (0.7071-0.7071j)

for n = 15
        (1+0j)
        (0.9239+0.3827j)
        (0.7071+0.7071j)
        (0.3827+0.9239j)
        (0.+1j)
        (-0.3827+0.9239j)
        (-0.7071+0.7071j)
        (-0.9239+0.3827j)
        (-1+0j)
        (-0.9239-0.3827j)
        (-0.7071-0.7071j)
        (-0.3827-0.9239j)
        (-0-1j)
        (0.3827-0.9239j)
        (0.7071-0.7071j)
        (0.9239-0.3827j)
```