CSE 3313 - Homework #4 – System Frequency Response HW

# System Frequency Response

Find the system frequency response or DTFT, if it exists

2. 1. Does not exist.

Assuming you mean h[n] instead of x[n]. Otherwise the question doesn’t make sense for this kind of problem.

2. 1. Does not exist.

For the difference equation below

1. What range of values for 𝛼 will result in a system frequence response that exists?
2. Fing h[n] from the difference equation.
3. Find for the system.
4. Find the magnitude-squared system frequency response for the system in terms of trigonometric functions and plot the response from w=0 to w=2π.

To find magnitude squared of a complex frequency, you multiply by the complex conjugate.

As a final note, the equation in the frequency response notes is incorrect. The sign is wrong. It should be

as shown in the difference equation notes.