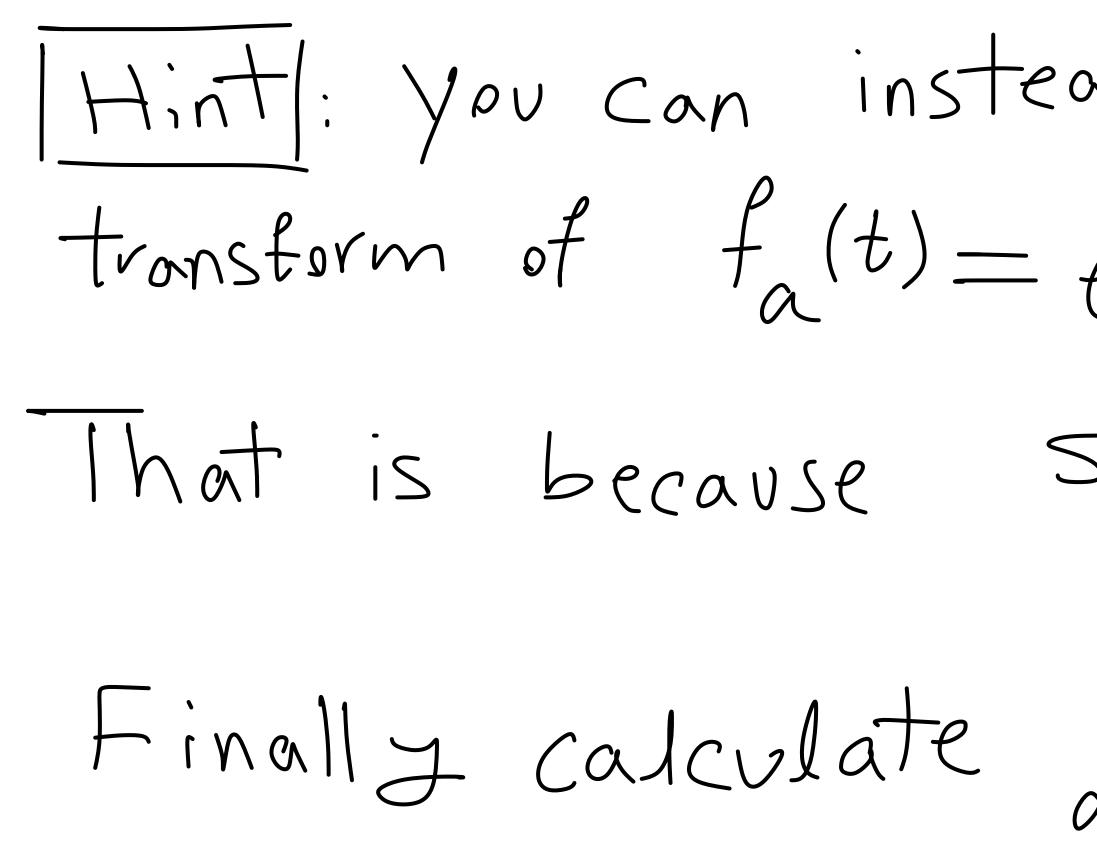
Principles of communication systems EET3202, CUNY City Tech, Fall 2023 Homework #02 (Due on Sep 14)

S. M. Farzaneh | Sep 7, 2023

Problem 1

Part 1: From the definition of Fourier transform, Prove that $g(-t) \in F \rightarrow G(-f)$ Part 2: Find the Fourier transform of e u(t) Partz: Use Parts 1 and 2 to find the Fourier transform of e u(-t) and -alt

Problem 2 Fourier transform of the sign fu



$$f(t) = \begin{cases} 1 & t > 0 \\ 0 & t = 0 \\ -1 & t < 0 \end{cases}$$

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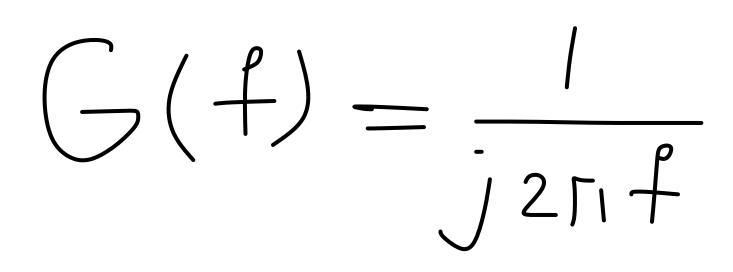
$$f(t) = f(t)$$

Problem 3 Find the Fourier transform of the following function. $J(t) = \rho$

Hint: use the result of problem 1 part 3 of Fourier Transform.

as well as the "Time-Shifting" property

Problem 4



Plot the amplitude and phase of the following Fourier function vs frequency.

