

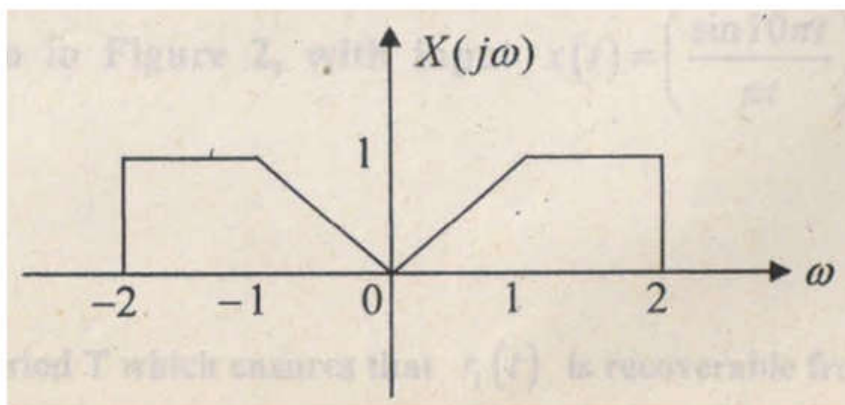
Discussion problem assignment:

第一题:

1. Given the following spectrum, do the following:

(a) Find $\left. \frac{dx(t)}{dt} \right|_{t=0}$

(b) Compute $\int_{-\infty}^{+\infty} x(t) \frac{\sin t}{\pi t} e^{jt} dt$



第二题:

For an LTI system, it is known that the input signal

$$x(t) = \delta(t) + e^{-3t} u(t)$$

will generate an output signal $y(t) = e^{-2t} u(t)$. Determine the system's unit impulse response $h(t)$ and write out the linear constant coefficient equation to describe the system.