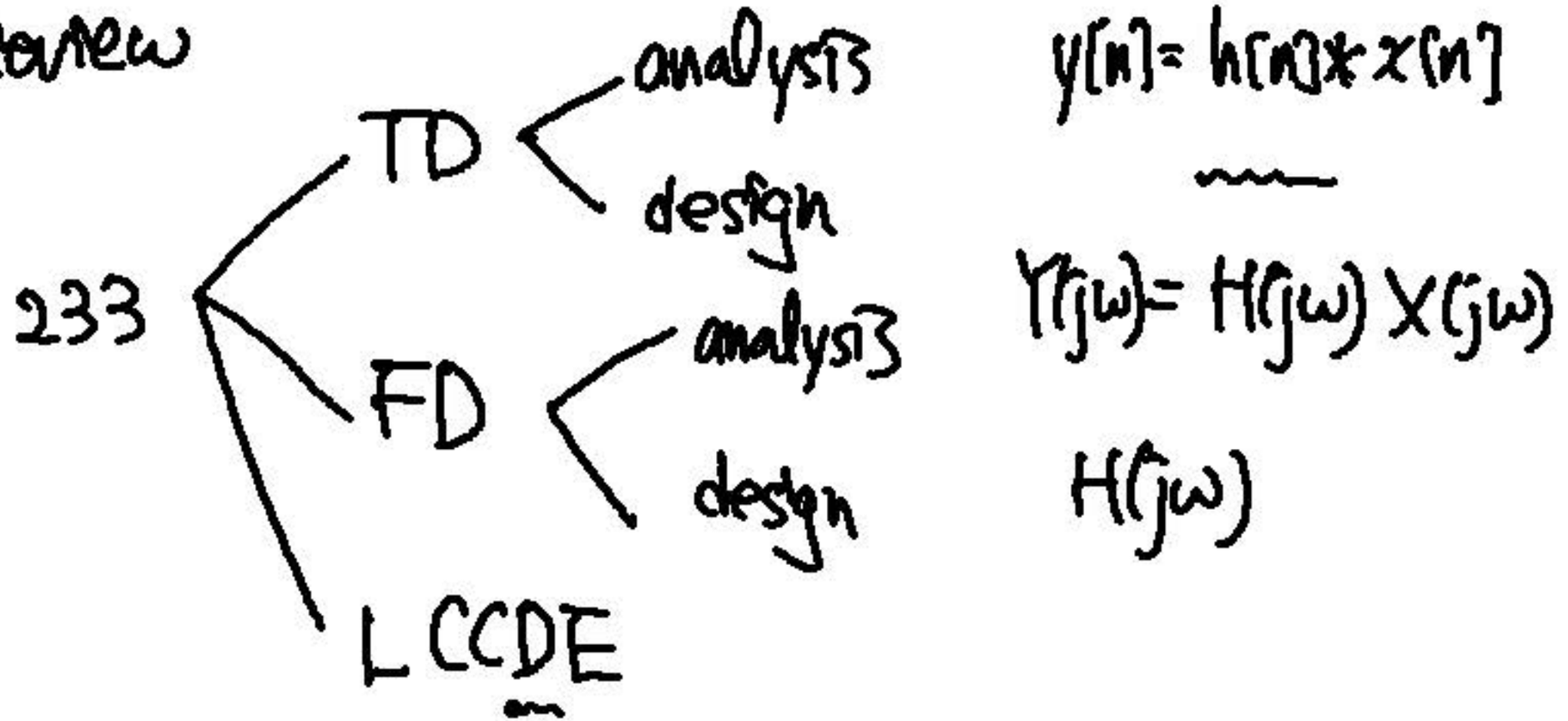
EECE 233 Fall 2014 Lec. #19

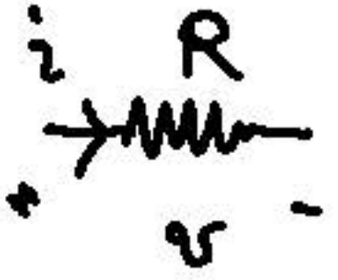
Announcement

Sorry, we'll have Quiz, MATLAB on this Friday.

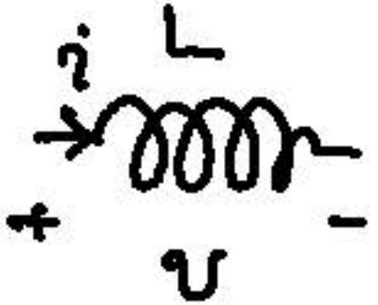
Review



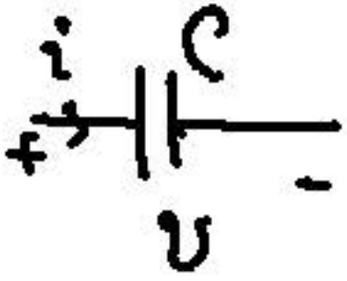
3 equations



$$v = iR$$



$$v = -L\frac{di}{dt}$$



$$v = \frac{1}{C}\int i\,dt$$

$$y(t) = \frac{dx(t)}{dt} \Leftrightarrow Y(j\omega) = j\omega X(j\omega)$$

$$y(t) = \int_{-\infty}^{t} x(\tau)\,d\tau \Leftrightarrow Y(j\omega) = \frac{1}{j\omega} X(j\omega)$$

$$y(t) = \frac{dx(t)}{dt}$$

$$Y(j\omega) = \int_{-\infty}^{\infty} y(t) e^{-j\omega t} dt = \int_{-\infty}^{\infty} \frac{dx(t)}{dt} e^{-j\omega t} dt$$

$$y(t) = \frac{d}{dt}\left(\frac{1}{2\pi}\int_{-\infty}^{\infty} X(j\omega) e^{j\omega t} d\omega\right)$$

$$= \frac{1}{2\pi}\int_{-\infty}^{\infty} X(j\omega)\left(\frac{d}{dt} e^{j\omega t}\right) d\omega$$

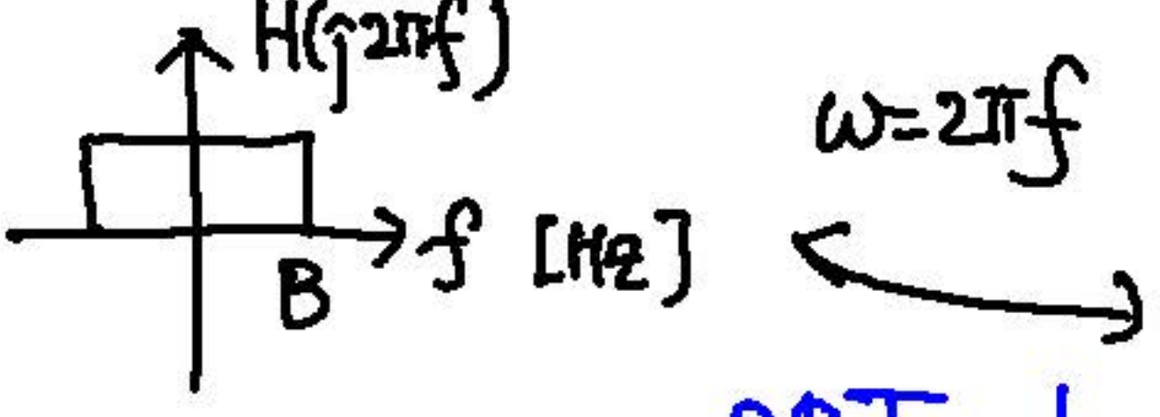
$$= \frac{1}{2\pi}\int_{-\infty}^{\infty} j\omega X(j\omega)\, e^{j\omega t} d\omega$$

$$= \frac{1}{2\pi}\int_{-\infty}^{\infty} Y(j\omega)\, e^{j\omega t} d\omega$$

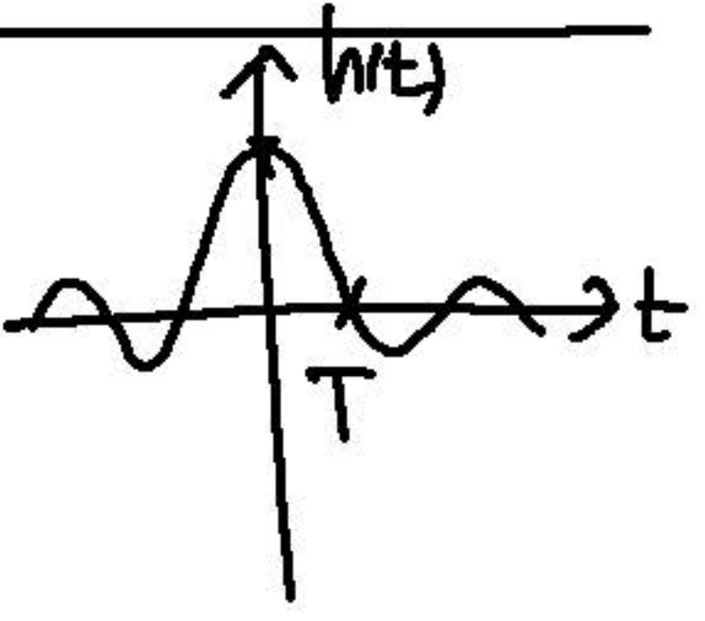
$$y(t) = \int_{-\infty}^{t} x(\tau)\, d\tau$$

$$\frac{dy(t)}{dt} = x(t) \xleftrightarrow{FT} jw\,Y(jw) = X(jw)$$

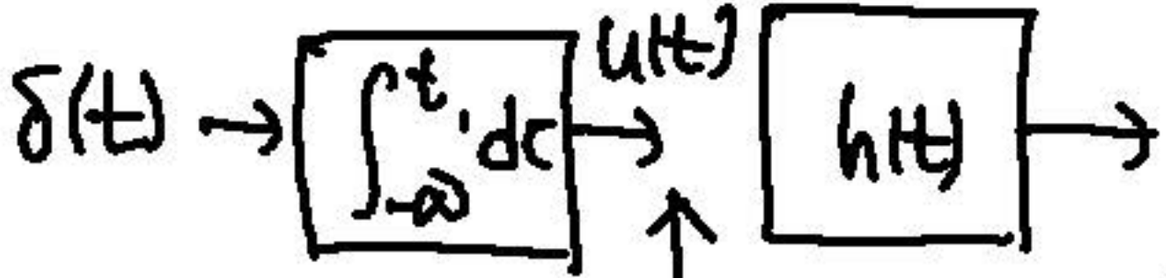
$$\therefore H(jw) = \frac{1}{jw}.$$

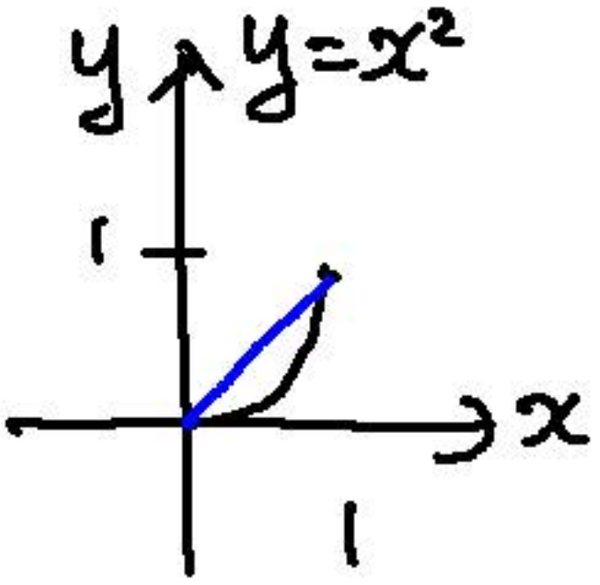


$w = 2\pi f$

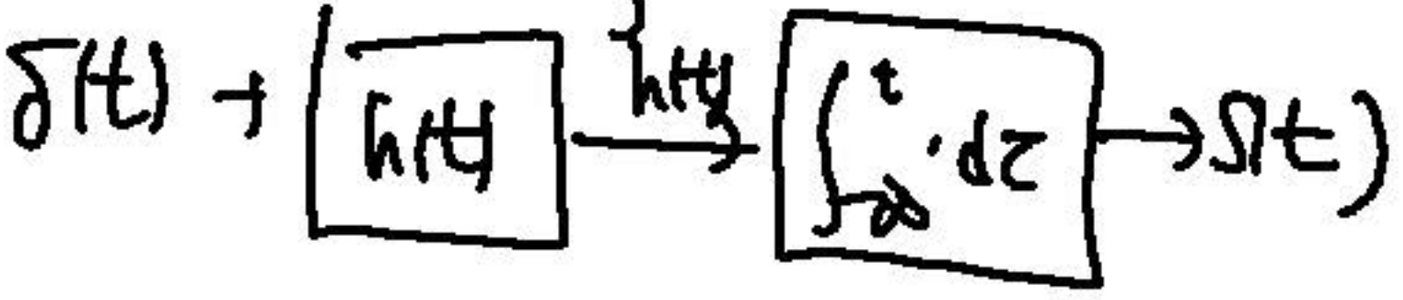


$2BT = 1.$





$$S(j\omega) = \frac{1}{j\omega} H(j\omega)$$



유리수 有理數 rational number

ratio 비 $\frac{b}{a}$

무리수 無... irrational number

$$\frac{\sum_{k=0}^{N} b_k s^m}{\sum_{k=0}^{M} a_k s^k}$$ rational function of s

$$\frac{6s-7}{s^3+2s-s-5}$$