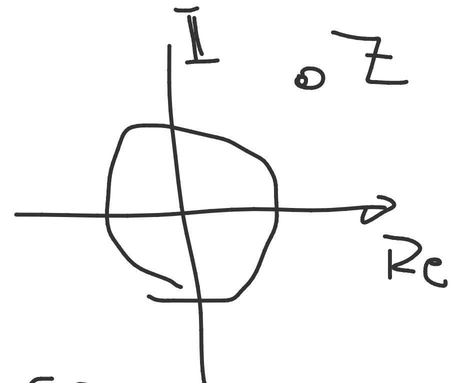
BiomedicalSignalProcessing01

Saturday, March 21, 2020 4:42 PM

$$X(z) = \sum_{n=0}^{\infty} x[n] z^{-n}$$

$$X(\omega) = \sum_{n=0}^{\infty} x[n] e^{-j\omega n}$$

$\Rightarrow$




$$\delta[n-n_0] \xrightarrow{z} \delta(z) = z^{-n_0}$$

$$5z^{-3}$$

$$\left(e^{-j\omega}\right)^{-n}$$

$$20 \log_{10} |X(\omega)|$$

$$\angle X(\omega)$$

$$X(z) = 2 + 3z^{-1} + 4z^{-2} +$$

$$x[n] = 2\delta[n] + 3\delta[n-1] + 4\delta[n-2] + 5\delta[n-3]$$

$$X(z) = \frac{2 \cdot z^3 + 3z^2 + 4z + 5}{z^{+3}} = (1 - r_1 z^{-1})(1 - r_2 \ldots$$

$$-2y[n-1] + 3y[n-2]$$

$$a_0 y[n] = \sum_{i=0}^{N} b_i x[n-i] + \sum_{i=1}^{M} a_i y[n-i]$$

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$$\frac{Y(z)}{X(z)} = \sum_{i=0}^{N} b_i \frac{X(z) z^{-i}}{X(z)} + \sum_{i=1}^{M} a_i \frac{Y(z)}{X(z)} z^{-i} \Rightarrow$$

$$\frac{Y(z)}{X(z)} \equiv H(z) \Rightarrow$$

$\equiv H(z) \Rightarrow$

$$\boxed{H(z) = \frac{\sum_{i=0} b_i z^{-i}}{1 - \sum_{i=0}^{m} \alpha_i z^{-i}}}$$

$$\prod_{i=0}^{N} (1 - r_i z^{-1})$$

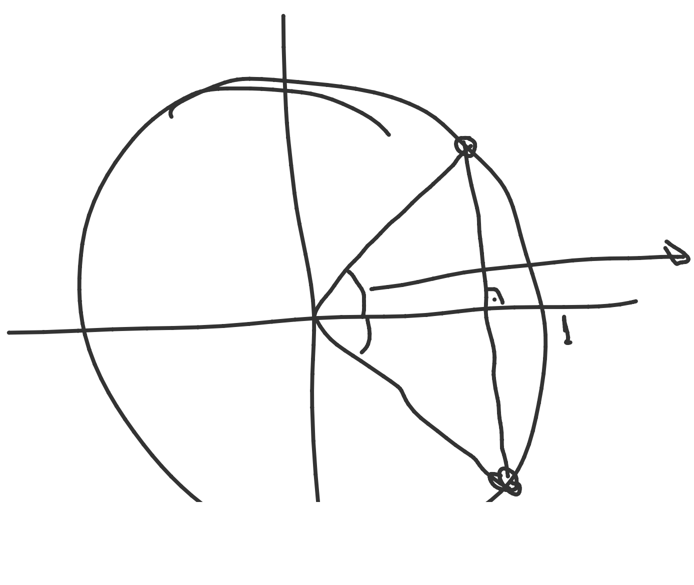
$$h[n] = [1, -1] = \delta[n] - \delta[n-1] \Rightarrow$$

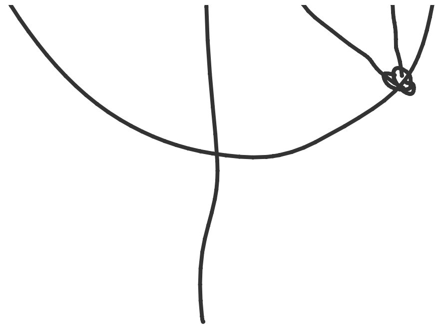
$\downarrow Z$

$$H(z) = 1 - z^{-1} = \frac{z-1}{z}$$

$$H(z) = \frac{\prod_{i=0}^{N} (1 - r_i z^{-i})}{\prod_{i=0}^{m} (1 - p_i z^{-i})}$$

$$|e^{j\theta}| = 1$$





$$y[n] = x[n] - 1.9765\,x[n-2] + x[n-3]$$