

Group 1

محمد عرفان زارع

نام درس

تبدیل فوریه را بایز

$$x[n] = \left(\frac{1}{\sqrt{r}}\right)^{|n|} \cos\left(\frac{\pi}{\sqrt{r}}(n-r)\right)$$

$$F\{x[n]\} = ? \quad \textcircled{1} \sum_{n=-\infty}^{+\infty} x[n] e^{jk\omega_0 n}$$

$$\textcircled{1} = \sum_{n=-\infty}^{-1} \left(\frac{1}{\sqrt{r}}\right)^{-n} \cos\left(\frac{\pi}{\sqrt{r}}(n-r)\right) e^{jk\omega_0 n} + \sum_{n=0}^{\infty} \left(\frac{1}{\sqrt{r}}\right)^n \cos\left(\frac{\pi}{\sqrt{r}}(n-r)\right) e^{jk\omega_0 n}$$

~~$$\sum_{n=-\infty}^{-1} \cos\left(\frac{\pi}{\sqrt{r}}(n-r)\right) e^{jk\omega_0 n}$$~~

$$x[n] = \frac{1}{\sqrt{r}} \left\{ \left(\frac{1}{r}\right)^{|n|} \cos\left(\frac{\pi}{\sqrt{r}} n\right) - \left(\frac{1}{r}\right)^{|n|} \sin\left(\frac{\pi}{\sqrt{r}} n\right) \right\}$$

~~$$x[n] = \left(\frac{1}{r}\right)^n u[n] + \left(\frac{1}{r}\right)^{-n} u[-n]$$~~

$$x(e^{j\omega}) = \frac{1}{1 - \frac{1}{r} e^{-j\omega}} + \frac{1}{1 - \frac{1}{r} e^{j\omega}} - 1 = A$$

$$x(e^{j\omega}) = \frac{\sqrt{r}}{r} \left\{ x_0(e^{j(\omega - \frac{\pi}{\sqrt{r}})}) - x_0(e^{j(\omega + \frac{\pi}{\sqrt{r}})}) \right\}$$

$$-\frac{\sqrt{r}}{r} \left\{ x_0(e^{j(\omega - \frac{\pi}{\sqrt{r}})}) + x_0(e^{j(\omega + \frac{\pi}{\sqrt{r}})}) \right\}$$

$$x_0 = A$$