

$$5). \quad \varepsilon^{-1} = e^{-\frac{2i\pi}{5}} \quad \varepsilon^4 = e^{\frac{8i\pi}{5}}$$

$$\varepsilon^{-1} = \varepsilon^4 \quad \text{car: } -\frac{2i\pi}{5} + 2\pi = \frac{8i\pi}{5}$$

$$\text{et } -\frac{2\pi}{5} \equiv \frac{8\pi}{5} [2\pi]$$

$$\text{Et: } (\varepsilon^{-1} = \varepsilon^4) \Rightarrow (\varepsilon^{-2} = \varepsilon^3)$$

$$7). \quad \varepsilon + \varepsilon^{-1} = 2 \cos\left(\frac{2\pi}{5}\right)$$

$$\varepsilon^{-1} = \overline{\varepsilon} \quad \text{donc } \varepsilon^{-2} = \overline{\varepsilon}^2 = \overline{\varepsilon^2}$$

$$\text{Alors: } \varepsilon^2 + \varepsilon^{-2} = 2 \cos\left(\frac{4\pi}{5}\right)$$

$$\text{Donc: } \alpha = 2 \cos\left(\frac{2\pi}{5}\right)$$

$$\beta = 2 \cos\left(\frac{4\pi}{5}\right)$$

$$8). \quad \cos\left(\frac{2\pi}{5}\right) = \frac{\varepsilon^1 + \varepsilon^{-1}}{2}$$

$$\cos\left(\frac{4\pi}{5}\right) = \frac{\varepsilon^2 + \varepsilon^{-2}}{2}$$