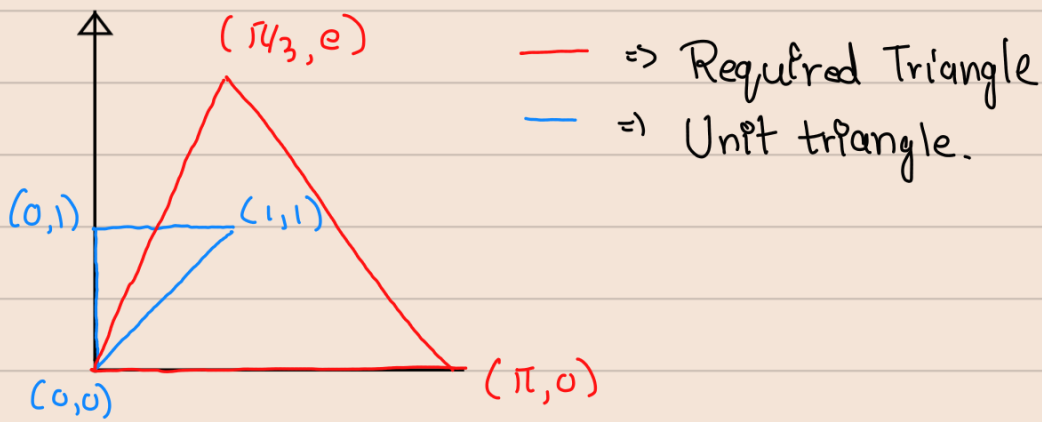


Calculating transformation matrix, A.



We need to convert $\begin{bmatrix} 0 \\ 1 \end{bmatrix}$ to $\begin{bmatrix} \pi/3 \\ e \end{bmatrix}$

& $\begin{bmatrix} 1 \\ 1 \end{bmatrix}$ to $\begin{bmatrix} \pi \\ 0 \end{bmatrix}$

$$\text{Let } A = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$$

$$A \begin{bmatrix} 0 \\ 1 \end{bmatrix} = \begin{bmatrix} \pi/3 \\ e \end{bmatrix} \Rightarrow \begin{bmatrix} b \\ d \end{bmatrix} = \begin{bmatrix} \pi/3 \\ e \end{bmatrix}$$

$$\therefore \boxed{b = \frac{\pi}{3}, d = e}$$

$$A \begin{bmatrix} 1 \\ 1 \end{bmatrix} = \begin{bmatrix} \pi \\ 0 \end{bmatrix} \Rightarrow \begin{bmatrix} a & \pi/3 \\ c & e \end{bmatrix} \begin{bmatrix} 1 \\ 1 \end{bmatrix} = \begin{bmatrix} \pi \\ 0 \end{bmatrix}$$

$$\Rightarrow \boxed{a = \frac{2\pi}{3}, c = -e}$$

$$\therefore A = \begin{bmatrix} \frac{2\pi}{3} & \pi/3 \\ -e & e \end{bmatrix}$$