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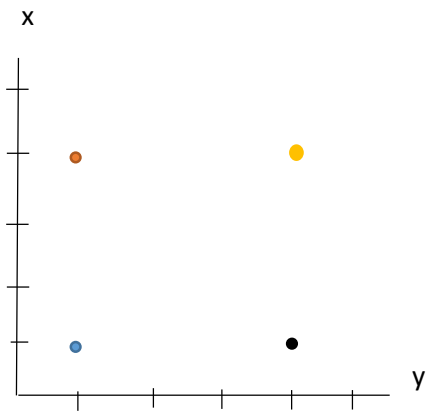
1. P1(10,10,0) P2(40,10,0) P3(40,40,0) P4(10,40,0) 6000393



- Rotar todos los puntos (10*3=30) grados con respecto al origen, alrededor del eje Y.

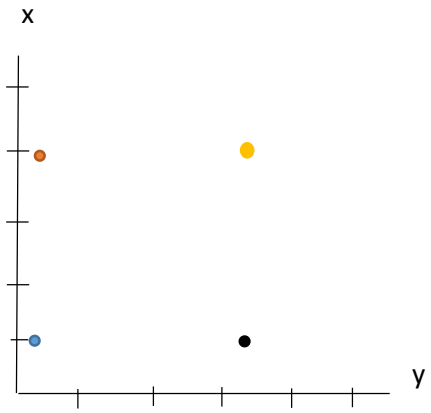
$$Rxz\ \theta = \begin{vmatrix} \cos(30) & 0 & \sin(30) & 0 \\ 0 & 1 & 0 & 0 \\ -\sin(30) & 0 & \cos(30) & 0 \\ 0 & 0 & 0 & 1 \end{vmatrix} = \begin{vmatrix} \sqrt{3}/2 & 0 & 1/2 & 0 \\ O & 1 & 0 & 1 \\ -1/2 & 0 & 1 & 1 \\ 0 & 0 & 0 & 1 \end{vmatrix}$$

$$P1 = \begin{vmatrix} 10 \\ 10 \\ 0 \\ 1 \end{vmatrix} \begin{vmatrix} \sqrt{3}/2 & 0 & ½ & 0 \\ O & 1 & 0 & 1 \\ -1/2 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{vmatrix} = \begin{vmatrix} 5\sqrt{3} \\ 10 \\ 0 \\ 1 \end{vmatrix}$$

$$P2 = \begin{vmatrix} 40 \\ 10 \\ 0 \\ 1 \end{vmatrix} \begin{vmatrix} \sqrt{3}/2 & 0 & ½ & 0 \\ O & 1 & 0 & 1 \\ -1/2 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{vmatrix} = \begin{vmatrix} 20\sqrt{3} \\ 10 \\ 0 \\ 1 \end{vmatrix}$$

$$P3 = \begin{vmatrix} 40 \\ 40 \\ 0 \\ 1 \end{vmatrix} \begin{vmatrix} \sqrt{3}/2 & 0 & ½ & 0 \\ O & 1 & 0 & 1 \\ -1/2 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{vmatrix} = \begin{vmatrix} 20\sqrt{3} \\ 40 \\ 0 \\ 1 \end{vmatrix}$$

$$P4=\begin{vmatrix}10\\40\\0\\1\end{vmatrix}\quad\begin{vmatrix}\sqrt{3}/2 & 0 & ½ & 0\\ 0 & 1 & 0 & 1\\ -1/2 & 0 & 1 & 0\\ 0 & 0 & 0 & 1\end{vmatrix}\quad=\quad\begin{vmatrix}5\sqrt{3}\\40\\0\\1\end{vmatrix}$$



- Trasladar (10-1=9) unidad en z

$$P1=\begin{vmatrix}5\sqrt{3}\\10\\0\\1\end{vmatrix}\quad\begin{vmatrix}1 & 0 & 0 & 0\\ 0 & 1 & 0 & 1\\ 0 & 0 & 1 & 1\\ 0 & 0 & 0 & 1\end{vmatrix}\quad=\quad\begin{vmatrix}5\sqrt{3}\\10\\1\\1\end{vmatrix}$$

$$P2=\begin{vmatrix}20\sqrt{3}\\10\\0\\1\end{vmatrix}\quad\begin{vmatrix}1 & 0 & 0 & 0\\ 0 & 1 & 0 & 1\\ 0 & 0 & 1 & 1\\ 0 & 0 & 0 & 1\end{vmatrix}\quad=\quad\begin{vmatrix}20\sqrt{3}\\10\\1\\1\end{vmatrix}$$

$$P3=\begin{vmatrix}20\sqrt{3}\\40\\0\\1\end{vmatrix}\quad\begin{vmatrix}1 & 0 & 0 & 0\\ 0 & 1 & 0 & 1\\ 0 & 0 & 1 & 1\\ 0 & 0 & 0 & 1\end{vmatrix}\quad=\quad\begin{vmatrix}20\sqrt{3}\\40\\1\\1\end{vmatrix}$$

$$P4=\begin{vmatrix} 5\sqrt{3} \\ 40 \\ 0 \\ 1 \end{vmatrix} \begin{vmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 1 \\ 0 & 0 & 1 & 1 \\ 0 & 0 & 0 & 1 \end{vmatrix} = \begin{vmatrix} 50\sqrt{3} \\ 40 \\ 1 \\ 1 \end{vmatrix}$$

- Escalar (10-3=7) unidades en x

$$P1=\begin{vmatrix} 5\sqrt{3} \\ 10 \\ 1 \\ 1 \end{vmatrix} \begin{vmatrix} 7 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{vmatrix} = \begin{vmatrix} 35\sqrt{3} \\ 10 \\ 1 \\ 1 \end{vmatrix}$$

$$P2=\begin{vmatrix} 20\sqrt{3} \\ 10 \\ 01 \\ 1 \end{vmatrix} \begin{vmatrix} 7 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{vmatrix} = \begin{vmatrix} 242.48 \\ 10 \\ 1 \\ 1 \end{vmatrix}$$

$$P3=\begin{vmatrix} 20\sqrt{3} \\ 40 \\ 1 \\ 1 \end{vmatrix} \begin{vmatrix} 7 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{vmatrix} = \begin{vmatrix} 242.48 \\ 40 \\ 1 \\ 1 \end{vmatrix}$$

$$P4=\begin{vmatrix} 5\sqrt{3} \\ 40 \\ 1 \\ 1 \end{vmatrix} \quad \begin{vmatrix} 7 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{vmatrix} = \begin{vmatrix} 5\sqrt{3} \\ 40 \\ 1 \\ 1 \end{vmatrix}$$