

16. $T: P_2 \rightarrow P_3; T(a_0 + a_1x + a_2x^2) = a_1 - a_1x + a_0x^3$

Usando bases particular $B_1 = \{1, x, x^2\}$ e $B_2 = \{1, x, x^2, x^3\}$ em P_3

Se fizer

$$[T(1)]_{B_2} = \begin{pmatrix} 0 \\ 1 \\ 0 \\ 0 \end{pmatrix}, [T(x)]_{B_2} = \begin{pmatrix} 0 \\ 0 \\ 1 \\ 0 \end{pmatrix}, [T(x^2)]_{B_2} = \begin{pmatrix} 0 \\ 0 \\ 0 \\ 1 \end{pmatrix}$$

Se fizer que $p(A) = 3$ y en la base es

$$\left\{ \begin{pmatrix} 0 \\ 1 \\ 0 \\ 0 \end{pmatrix}, \begin{pmatrix} 0 \\ 0 \\ 1 \\ 0 \end{pmatrix}, \begin{pmatrix} 0 \\ 0 \\ 0 \\ 1 \end{pmatrix} \right\}$$

en donde $\text{Im } T = \text{gen} \{x, x^2, x^3\}$