

1. 請框出答案. 2. 不可使用手機、計算器，禁止作弊!
3. 請自備白紙書寫，作答完畢請拍照上傳 Googld Classroom
4. 照片請清晰並轉正

1. Find the coordinate vector of the given vector relative to the indicated ordered basis.
 $x^3 + 3x^2 - 3x + 2$ in P_3 relative to $(x, x^2 - 1, x^3, 2x^2)$

Answer: the coordinate vector is [-3, -2, 1, 2.5]

$$\left[\begin{array}{cccc|c} 0 & 0 & 1 & 0 & 1 \\ 0 & 1 & 0 & 2 & 3 \\ 1 & 0 & 0 & 0 & -3 \\ 0 & -1 & 0 & 0 & 2 \end{array} \right] \sim \left[\begin{array}{cccc|c} 1 & 0 & 0 & 0 & -3 \\ 0 & 1 & 0 & 0 & -2 \\ 0 & 0 & 1 & 0 & 1 \\ 0 & 0 & 0 & 1 & 2.5 \end{array} \right]$$