

Due date: 2020-11-24 (화) 수업시간 전 까지

1. When $A = \begin{bmatrix} 1 & 1 & -1 & 0 & 2 \\ -2 & 0 & 2 & 4 & 4 \\ 2 & 2 & -2 & 0 & 1 \\ -3 & -1 & 3 & 4 & 5 \end{bmatrix}$, let $W = \text{col}(A)$. Find a basis for W^\perp .

2. Let $A = \{\mathbf{v}_1, \mathbf{v}_2, \mathbf{v}_3\}$ (with $\mathbf{v}_1 = (0, 1, 0)$, $\mathbf{v}_2 = (-\frac{1}{\sqrt{2}}, 0, \frac{1}{\sqrt{2}})$, $\mathbf{v}_3 = (\frac{1}{\sqrt{2}}, 0, \frac{1}{\sqrt{2}})$), $B = \{\mathbf{u}_1, \mathbf{u}_2, \mathbf{u}_3\}$ (with $\mathbf{u}_1 = (1, 0, 0)$, $\mathbf{u}_2 = (0, 1, 2)$, $\mathbf{u}_3 = (0, -2, 1)$) and $C = \{\mathbf{w}_1, \mathbf{w}_2, \mathbf{w}_3\}$ (with $\mathbf{w}_1 = (1, 0, 0)$, $\mathbf{w}_2 = (1, 1, 0)$, $\mathbf{w}_3 = (1, 1, 1)$) be three bases of \mathcal{R}^3 . Find $[\mathbf{x}]_A$, $[\mathbf{x}]_B$, and $[\mathbf{x}]_C$, when $\mathbf{x} = (3, 1, -2)$.