2018 Fall EECS205002 Linear Algebra

Name: ID:

2018/12/19 Quiz 7

1. When the equality holds for $< \vec{v}, \vec{u} > \leq \|\vec{v}\|\|\vec{u}\|$? Justify your answer.

2. Write the normal equation for finding $y = ax^2 + bx + c$ to fit the observed data.

x	0	1	2	3
y	3	2	4	4

3. Let $A = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 1 & 1 \\ 0 & 0 & 1 & 1 \\ 0 & 0 & 2 & 2 \end{bmatrix}$. Determine the bases of subspace for $N(A)$ and $R(A^T)$.

4. Let U and V are two subspaces in $\mathbb{R}^2$. Give an example to explain the difference of $U \cup V$, $U + V$, and $U \oplus V$.