Chapter 3

→ Section 3.1
→ Section 3.2
→ Section 3.3
→ Linear functional: It takes two vectors and transforms it into a scalar.
Eg. Dot Product

Dot product can be understood in terms of matrix multiplication.

$$\bar{a} = \begin{bmatrix} a_1 \\ a_2 \\ \vdots \\ a_n \end{bmatrix}_{n\times 1} \quad ; \quad \bar{b} = \begin{bmatrix} b_1 \\ b_2 \\ \vdots \\ b_n \end{bmatrix}_{n\times 1}$$

$$\bar{a}\cdot\bar{b} = (a^T)(b)$$

$$= [a_1\ a_2\ \cdots\ a_n]_{1\times n} \begin{bmatrix} b_1 \\ b_2 \\ \vdots \\ b_n \end{bmatrix}_{n\times 1}$$

$$= a_1\cdot b_1 + a_2\cdot b_2 + \cdots + a_n\cdot b_n$$

Chapter 4

→ Section 4.2 (Before Proof of Laplace Expansion Theorem)

Chapter 7

→ Section 7.1 (Before Orthogonal Projections ---- Process)

Chapter 5

→ Section 5.1 (Before Theorem 5.6)
→ Section 5.2 (Skip Theorem 5.10, Before Theorem 5.11)