REMARK ON CHAPTER (4)

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If $\dim(\mathbb{V}) = \mathbf{n}$, **and** $\mathbf{S} = \{\underline{\mathbf{v}}_1, \underline{\mathbf{v}}_2, ..., \underline{\mathbf{v}}_k\} \subseteq \mathbb{V}$. **Then:**

(1) $\mathbf{k} > \mathbf{n}$, **then :-**

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(i) S is L.D.

(ii) S

may span $\mathbb{V}$	**exp.** $\mathbf{S} = \{(1,2),(2,3),(3,5)\}$, **since** $\{(1,2),(2,3)\}$ **span** $\mathbb{V}$
may can't span $\mathbb{V}$	**exp.** $\mathbf{S} = \{(1,2),(2,4),(3,6)\}$, **since there is no subset of S that span** $\mathbb{V}$

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(2) $\mathbf{k} < \mathbf{n}$, **then :-**

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(i) S can't span $\mathbb{V}$.

(ii) S

may be L.D.	**exp.** $\mathbf{S} = \{(1,2,3),(2,4,6)\}$, **since** $(2,4,6) = 2(1,2,3)$
may be L.I.	**exp.** $\mathbf{S} = \{(1,2,3),(3,5,7)\}$, **since** $\underline{\mathbf{v}}_1 \neq \underline{\mathbf{v}}_2$.

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(3) $\mathbf{k} = \mathbf{n}$, **then by Theorem 12 :-**

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S

(i) **S isL.I.** $\Longleftrightarrow$ **S span** $\mathbb{V}$	**exp S** $= \{(1,2),(2,3)\}$
(ii) **S isL.D.** $\Longleftrightarrow$ **S can't span** $\mathbb{V}$	**exp S** $= \{(1,2),(2,4)\}$