

$$\Rightarrow X_1 + X_2 = \{ \alpha_1 u_1 + \beta_1 v_1, \alpha_2 u_2 + \beta_2 v_2, \dots, \alpha_n u_n + \beta_n v_n \}$$

$$X_1 \cup X_2 = \{ u_1, \dots, u_n, v_1, \dots, v_n \}$$

$$\begin{aligned} [X_1 \cup X_2] &= \alpha_1 u_1 + \dots + \alpha_n u_n + \beta_1 v_1 + \dots + \beta_n v_n \\ &= \alpha_1 u_1 + \beta_1 v_1 + \alpha_2 u_2 + \beta_2 v_2 + \dots + \alpha_n u_n + \beta_n v_n \\ &\in X_1 + X_2 \end{aligned}$$