2) Theorem \( T \) of \( \{ v_i \} \) - derived from... 

3) Take \( X = \{ v_i \} \) - calculate order... 

\[ V_1 = \text{order of } \{ v_i \} \]
1) **Definition of a group variety**

2) **Equation of variety**

3) **Tangential plane at a point**

4) **Ideal of the variety**
3. Take \( Y = \frac{1}{V^*} \), \( V_i \) - underlined body on \( V \), \( \mathcal{O} \).

\[ Y_i = \mu ^{\mathcal{O}} (V_i) \otimes \mu ^{\mathcal{O}} (V_i)^* \]

\[ T_{\mathcal{O}} = \rho (X, V_i) \to \text{ModGr}_{\mathcal{O}}(\mathbb{P}^n) \]

Theorem 2: \( T_{\mathcal{O}} (V_i) = \rho (X, V_i) \)

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\[ \text{Hom} (\mathcal{O}, \mathcal{O}) = \bigoplus_{i=1}^{r} \mathcal{O}^* \]

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**Theorem 3:**

1. For any \( k \)-dimensional variety \( X \) of \( \mathbb{P}^n \),

\[ V_i = \mu ^{\mathcal{O}} (V_i) \otimes \mu ^{\mathcal{O}} (V_i)^* \]

2. \( \mathbf{P} \times \mathbf{P} \to \mathbf{P} \)

**Theorem 4:**

1. For any \( k \)-dimensional variety \( X \) of \( \mathbb{P}^n \),

\[ V_i = \mu ^{\mathcal{O}} (V_i) \otimes \mu ^{\mathcal{O}} (V_i)^* \]

2. \( \mathbf{P} \times \mathbf{P} \to \mathbf{P} \)

**Theorem 5:**

1. For any \( k \)-dimensional variety \( X \) of \( \mathbb{P}^n \),

\[ V_i = \mu ^{\mathcal{O}} (V_i) \otimes \mu ^{\mathcal{O}} (V_i)^* \]

2. \( \mathbf{P} \times \mathbf{P} \to \mathbf{P} \)
4) Let \( l \) be a linear space, \( A \) an algebra with a unit, \( \varphi: A \to l \), \( \varphi(1) = e \), \( e \) the unit of \( l \).

**Main Theorem**: \( k \leq \dim(l) \Rightarrow \exists \lambda \in l \) such that \( E \varphi = \lambda \) for any \( E \in \mathcal{L}(A) \).

**Proof**: Assume \( \dim(l) < \infty \) and \( \varphi(1) = e \). Let \( \lambda = 0 \) in \( l \).

**Step 1**: Assume \( \dim(l) < \infty \). Let \( \lambda \in l \) be arbitrary.

**Step 2**: Define \( E \varphi = \lambda \) for any \( E \in \mathcal{L}(A) \).

**Step 3**: Verify that \( \varphi(1) = e \) is satisfied.

**Step 4**: Conclude that \( \lambda \) is an eigenvalue of \( \varphi \).

**Step 5**: Show that the corresponding eigenspace is non-trivial.

**Step 6**: Use the properties of \( \mathcal{L}(A) \) and \( \varphi \) to complete the proof.