Content: Characters and applications. (Fulton-Harris 2,3.1). Lectures 30-33.

1 Hello

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Theorem 1.1
Describe the representations V_1 and V_2, and express them as direct sums of irreducible representations of S_4. Which degree 2 polynomials $f(x, y, z)$ are invariant under S_4?

Proof. Note that we may take the following as the rotation matrices of representative elements of conjugacy classes in S_4 acting on $\mathbb{R}^3$:

$$\boxed{\sum_{n=1}^{\infty} a_n z^n}.$$

□

Proposition
Describe the representations V_1 and V_2, and express them as direct sums of irreducible representations of S_4. Which degree 2 polynomials $f(x, y, z)$ are invariant under S_4?

1.1. Words

Corollary 1.2
Describe the representations V_1 and V_2, and express them as direct sums of irreducible representations of S_4. Which degree 2 polynomials $f(x, y, z)$ are invariant under S_4?

Lemma 1.3
Describe the representations V_1 and V_2, and express them as direct sums of irreducible representations of S_4. Which degree 2 polynomials $f(x, y, z)$ are invariant under S_4?

Definition 1.4 (Polynomial Rings)
Describe the representations V_1 and V_2, and express them as direct sums of irreducible representations of S_4. Which degree 2 polynomials $f(x, y, z)$ are invariant under S_4?

Example 1.5
Describe the representations V_1 and V_2, and express them as direct sums of irreducible representations of S_4. Which degree 2 polynomials $f(x, y, z)$ are invariant under S_4?

1.2. More

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Remark: Describe the representations V_1 and V_2, and express them as direct sums of irreducible representations of S_4. Which degree 2 polynomials $f(x, y, z)$ are invariant under S_4?

Fact
Describe the representations V_1 and V_2, and express them as direct sums of irreducible representations of S_4. Which degree 2 polynomials $f(x, y, z)$ are invariant under S_4?

> Describe the representations V_1 and V_2, and express them as direct sums of irreducible representations of S_4. Which degree 2 polynomials $f(x, y, z)$ are invariant under S_4? Fusce mauris. Vestibulum luctus nibh at lectus. Sed bibendum, nulla a faucibus semper, leo velit ultricies tellus, ac venenatis arcu wisi vel nisl. Vestibulum diam. Aliquam pellentesque, augue quis sagittis posuere, turpis lacus congue quam, in hendrerit risus eros eget felis. Maecenas eget erat in sapien mattis porttitor. Vestibulum porttitor. Nulla facilisi. Sed a turpis eu lacus commodo facilisis. Morbi fringilla, wisi in dignissim interdum, justo lectus sagittis dui, et vehicula libero dui cursus dui. Mauris tempor ligula sed lacus. Duis cursus enim ut augue. Cras ac magna. Cras nulla. Nulla egestas. Curabitur a leo. Quisque egestas wisi eget nunc. Nam feugiat lacus vel est. Curabitur consectetuer.

2 World

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