Gandini Notes on Invariants

$$S = \mathbb{K}[x]^G$$

J_G =IDEAL generated by all POSITIVE degree invariants.

$$x \mapsto -x, \quad f = x^2$$
$$\mathbb{K}[x^2] \text{ vs } (x^2)$$

To compute R^G, first compute $J_G = (f_1, \cdots, f_2)$ then $R^G = Ł[R_G(f_1), \cdots, R_G(f_2)]$ where R_G is the map $f \mapsto \frac{1}{|G|} \sum g \cdot f$.

Note: J_G is the hilbert ideal.

$J_G = (\mathbb{I}(A_G) + (y_1, \cdots, y_n) \cap \mathbb{K}[x_1, \cdots, x_n])$.

Now consider $\underline{x}, \underline{y}$.
G acts on $\underline{x}$.

$$\{(\underline{x}, g \cdots \underline{x})\}$$

on all $(\underline{x}, \underline{y})$ such that $\underline{y} = g \cdots \underline{x}$.

$$A_G = \bigcup_{g \in G} \{(\underline{x}, g \cdot \underline{x})\}$$