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class equation theorem

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Let G be a group acting on a finite set X . Define the set of invariants in X by the action of G as $G_X = \{x \in X \mid gx = x \ \forall g \in G\}$. Then there are H_1, \dots, H_r subgroups of G with $H_i \neq G \ \forall i$ such that $\#X = \#G_X + \sum_{i=1}^r [G : H_i]$