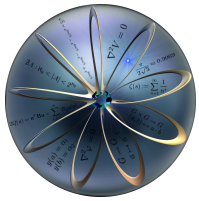

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proof of class equation theorem

Canonical name	ProofOfClassEquationTheorem
Date of creation	2013-03-22 14:20:52
Last modified on	2013-03-22 14:20:52
Owner	gumau (3545)
Last modified by	gumau (3545)
Numerical id	4
Author	gumau (3545)
Entry type	Proof
Classification	msc 20D20

X is a finite disjoint union of finite orbits: $X = \cup_i Gx_i$. We can separate this union by considerating first only the orbits of 1 element and then the rest: $X = \cup_{j=1}^{l} \{x_{i_j}\} \cup \cup_{k=1}^{s} Gx_{i_k} = G_X \cup_{k=1}^{s} Gx_{i_k}$ Then using the orbit-stabilizer theorem, we have $\#X = \#G_X + \sum_{k=1}^{s} [G : G_{x_{i_k}}]$ where for every k, $[G : G_{x_{i_k}}] \geq 2$, because if one of them were 1, then it would be associated to an orbit of 1 element, but we counted those orbits first. Then this stabilizers are not G. This finishes the proof.