

MATH 330 – HW #31

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Questions: Let G be a group and let $a \in G$. Prove that

- (1) $C_G(a) = \{g \in G : ga = ag\}$ is a subgroup of G .
- (2) Define $Z(G) = \{x \in G : xg = gx \text{ for all } g \in G\}$. Show that $Z(G) = \bigcup_{a \in G} C_G(a)$.