Name:
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MAS 4301.8385
Cyr

Quiz 3

You must give complete, mathematically correct proofs to receive full credit!!

Problem 1. (5 points) Consider the permutation $\sigma = (13654)(1524637) \in S_7$.
(a) Write σ as a product of disjoint cycles.
(b) Find $|\sigma|$.
(c) Is $\sigma \in A_7$? Explain why or why not.

Problem 2. (5 points) Let G be a group of permutations on a set X and let $a \in X$. Prove that $\text{stab}_G(a) = \{\alpha \in G \mid \alpha(a) = a\}$ is a subgroup of G.