

6. 6; 12

8. $|(123)(45678)| = 15$

22. If α and β are disjoint 2-cycles, then $|\alpha\beta| = \text{lcm}(2,2) = 2$. If α and β have exactly one symbol in common we can write $\alpha = (ab)$ and $\beta = (ac)$. Then $\alpha\beta = (ab)(ac) = (acb)$ and $|\alpha\beta| = 3$.

25. The identity is even; the set is not closed.

28. $7 \cdot 6 \cdot 5 \cdot 4 \cdot 3/5$