

11. $(135) = (15)(13)$ even; $(1356) = (16)(15)(13)$ odd; $(13567) = (17)(16)(15)(13)$ even; $(12)(134)(152) = (12)(14)(13)(12)(15)$ odd; $(1243)(3521) = (13)(14)(12)(31)(32)(35)$ even.

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50. If α and β have two symbols in common write $\alpha = (b_1 b_i)$ and $\beta = (b_1 b_2 \dots b_t)$. Then $\alpha\beta\alpha = (b_1 b_{i+1} b_{i+2} \dots b_t b_i b_2 b_3 \dots b_{i-1})$ (b_1 and b_i switch places) which is a t -cycle. If α and β have exactly one symbol in common write $\alpha = (a b_i)$ and $\beta = (b_1 b_2 \dots b_t)$. Then $\alpha\beta\alpha = (b_1 b_2 \dots b_{i-1} a b_{i+1} \dots b_t)$ (b_i is replaced by a). If α and β are disjoint, then $\alpha\beta\alpha = \beta$.