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**Quiz for March 25, 2004**

Give an example of a group of order 12 which is not abelian.

**ANSWER:** The group  $\mathbb{Z}_2 \times D_3$  is not abelian because

$$([0]_2, \sigma)([0]_2, \rho) = ([0]_2 + [0]_2, \sigma\rho) = ([0]_2, \sigma\rho),$$

$$([0]_2, \rho)([0]_2, \sigma) = ([0]_2 + [0]_2, \rho\sigma) = ([0]_2, \sigma\rho^2)$$

and  $\sigma\rho \neq \sigma\rho^2$ .