1. Show that $\mathbb{C} \otimes_{\mathbb{R}} \mathbb{C}$ is not a domain.
2. What is $\mathbb{Z}_m \otimes \mathbb{Z}_n$?
3. What is the semisimple decomposition of $\mathbb{Q}[D_{2n}]$? What are the irreducible representations?
4. What is the semisimple decomposition of $\mathbb{Q}[Q_{4n}]$? What are the irreducible representations?
5. What is the semisimple decomposition of $\mathbb{R}[A_4]$? What are the irreducible representations?