

Chapters 9-11 Supplementary Exercises

Gallian's Book on Abstract Algebra

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Exercise 8

Let k be a divisor of n . The factor group $(\mathbb{Z}/\langle n \rangle)/(\langle k \rangle/\langle n \rangle)$ is isomorphic to some very familiar group. What is the group?

By Exercise 40 of Chapter 10 (The Third Isomorphism Theorem), we see that $(\mathbb{Z}/\langle n \rangle)/(\langle k \rangle/\langle n \rangle) \approx \mathbb{Z}/\langle k \rangle$. What more is there to say?