

Complete Residue Systems: A Primer and an Application

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Complete residue systems play an integral role in abstract algebra and number theory, and a description is typically found in any number theory textbook. This note provides a concise overview of complete residue systems, including a robust definition, several well-known results, a proof to the converse of a well-known theorem, ancillary results pertaining to an application arising from the study of the roots of nonnegative matrices, and extends our knowledge of complete residue systems in relation to complete sets of roots of unity.

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