



Colloquium

January 17, 4:05 p.m. (9th Period)
(in the Atrium)

Speaker: Colin Defant

Title: How to Guard a Highly Symmetric Mall

Abstract

The unitary Cayley graph of $\mathbb{Z}/n\mathbb{Z}$ is the graph with vertices $0, 1, \dots, n - 1$ in which two vertices x and y are adjacent if and only if $x - y$ is relatively prime to n . In the first part of this talk, I will discuss some parameters associated with these graphs that involve interesting number-theoretic functions. The second part of the talk will focus on a recent attempt to understand domination parameters associated with unitary Cayley graphs. More generally, we consider graphs formed by taking direct products of simpler graphs. We will present some recent theorems involving estimates for domination numbers of direct products of complete graphs. These theorems extend results due to Mekis from 2010. Along the way, we will discuss some new open problems and a strikingly simple-sounding conjecture involving the upper domination numbers of certain direct product graphs. All of these terms will be defined. This represents joint work with Sumun Iyer.