VCU Discrete Mathematics Seminar

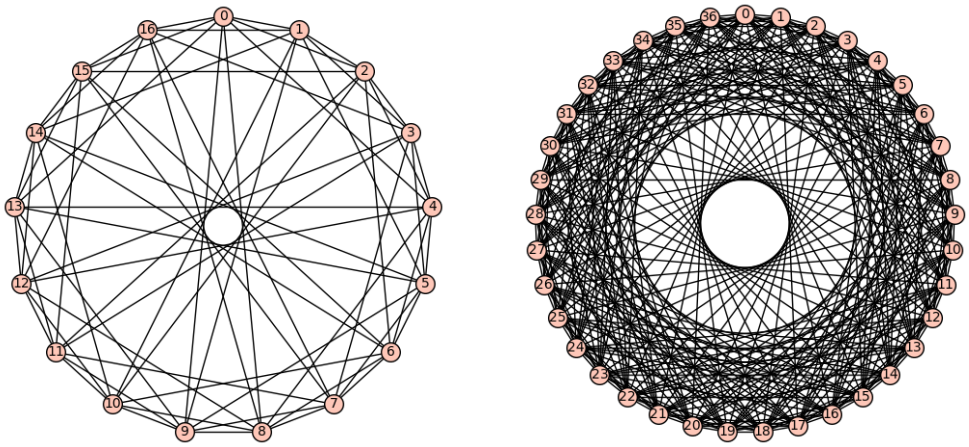
Amazing Conjectures about Paley Graphs

Prof Craig Larson
(VCU!)

Wednesday, April 16
1:00-1:50 EDT

In person! in 4145 Harris Hall. And on Zoom:

`https://vcu.zoom.us/j/92975799914`
`password=graphs2357`



A Paley graph P_p is defined on the finite field with p elements, where p is a $4k+1$ prime. The adjacency relation and key properties follow from basic results in number theory, all of which will be reviewed with examples. Paley graphs are highly symmetric and have a variety of other interesting properties. In particular they are examples of *concrete random graphs*.

The main purpose of this talk is to discuss the improbable and not-yet-understood connection between the unique sum of squares representation $p = x^2 + y^2$ of these primes, and the structure of the corresponding Paley graph P_p.

This is joint work with Bobby Jacobs.

For the DM seminar schedule, see:

`https://go.vcu.edu/discrete`