

A Tale of Two Rings



BI-STATE MATH COLLOQUIUM
Dr. Ken Price

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Ottensman 124, UW-Platteville

With springtime come thoughts of love and gardens. These thoughts are joined in Louise Riotte's gardening book, "Carrots Love Tomatoes," which points out carrots tend to be healthier when planted near tomatoes. On the other hand, potatoes do not love tomatoes because they share diseases.

To design gardens with happy plants in mind, we use directed graphs to show love from plant to plant. If plant A loves plant B we draw an arrow pointing from A to B.



Even though potatoes love cabbages and cabbages love tomatoes, potatoes do not love tomatoes. Thus love is not always transitive and this must be accounted for in a garden plan. Adding all arrows forced by transitivity would be a mistake. These extra arrows may lie about love.

But do not despair. We present an alternative, which may appeal to gardeners and also has interesting applications to matrix rings.

Dr. Ken Price is a professor of mathematics at UW Oshkosh who enjoys gardening and looking for ways to communicate aspects of his research in algebra to non-mathematicians. His work on incidence rings inspired this talk and the creation of Arrowgrams, a type of mathematical puzzle. Price also helped create Face Off, a student-centered math game show played at conferences around Wisconsin.



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