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Magic squares from a mathematical point of view are matrices with restrictions on each column and row sum as well as the sum of the diagonals. It has been known for centuries that some matrix operations (that result in rotations and reflections) on magic squares result in other magic squares. A group of us have discovered that classes of permutation matrices (one of which we call magic permutation matrices) can be used to convert a magic square to another related magic square. This has some consequences in the counting of magic squares of a given order as well as a way to generate new ones. In this talk I will show how these permutation matrix classes plays a role in understanding various properties of magic squares. (Received September 18, 2009)