**Magic Squares**

One interesting application of two-dimensional arrays is magic squares. A magic square is a square matrix in which the sum of every row, every column, and both diagonals is the same. Magic squares have been studied for many years, and there are some particularly famous magic squares. In this exercise you will write code to determine whether a square is magic.

File [Square.java](file:///X:\FHS%20Backup\COMP%20SCI\APCS\AP%20CS%20Textbook\Labs%20Ch1&%208-12\TamKH_Lab15\PhaseII\Square.java) contains the shell for a class that represents a square matrix. It contains headers for a constructor that gives the size of the square and methods to read values into the square, print the square, find the sum of a given row, find the sum of a given column, find the sum of the main (or other) diagonal, and determine whether the square is magic. The read method is given for you; you will need to write the others.

File [SquareTest.java](file:///X:\FHS%20Backup\COMP%20SCI\APCS\AP%20CS%20Textbook\Labs%20Ch1&%208-12\TamKH_Lab15\PhaseII\SquareTest.java) contains a program that reads input for squares and tells whether each is a magic square. Run your program on file [magicData](file:///X:\FHS%20Backup\COMP%20SCI\APCS\AP%20CS%20Textbook\Labs%20Ch1&%208-12\TamKH_Lab15\PhaseII\magicData) (this is a text file that you need saved into the same folder). Right now, each sum method is returning zero and the magic method is returning false. Once you update the Square class, you should find that the first, second, and third squares in the input are magic, and that the rest (fourth through seventh) are not. Note that the -1 at the bottom tells the test program to stop reading.