

## Problem Set 3

### Writing Functions

Complete each of the exercises below. Be certain to include all components of the **Design Recipe** when writing each function.

1. Develop a function named *pinwheel* that takes in a picture and produces four copies of it in a square, differently rotated: the original picture in the top left, rotated 90° clockwise in the top right, rotated 180° in the bottom right, and rotated 90° counterclockwise in the bottom left.
2. Develop a function named *bullseye* that produces a “bull’s eye” style target with two rings. It takes in two numbers indicating the radii of the outer ring and the inner disk, and two strings representing the colors of the outer ring and the color of the inner disk.
3. Develop a function named *text-box* that takes in two strings, of which the second should be a color-name, and two numbers (width and height), and produces a picture of the first string, in 18-point black type, on a background rectangle of the specific color, width, and height.
4. Develop a function named *two-eyes* that, given a number and a color name, produces a picture of two circular “eyes”, 100 pixels apart horizontally, Each one should have a black “pupil” of radius 10, surrounded by an “iris” of the specified color and radius (which you may assume is more than 10). The 100-pixel separation is measured from edge to edge, not center to center.
5. Develop a function named *circle-in-square* that takes in a number (the length of a side of a square) and two strings (the colors of a square and a circle), and produces a picture of a square of one color, with a circle of the other color inscribed inside it. The diameter of the circle should be the same as the side of the square, so the circle just barely touches the edge of the square at the middle of each side.