

### AS3 ESSENTIALS: THE GRAPHINGBOARD CLASS

Here we describe some properties and methods that will be used in this book. A reference to more complete documentation for this class is given at the end of the chapter.

#### Setup

- ▶ **myBoard = new GraphingBoard(w:Number, h:Number)**, the class constructor, creates a new GraphingBoard object **w** pixels wide, **h** pixels high.
- ▶ **myBoard.setVarsRanges(a:Number, b:Number, c:Number, d:Number)** sets up the minimum and maximum **x** and **y** values for the board's mathematical coordinate system.

For each controllable attribute, there is a method for getting and setting the corresponding property. We list here just the ones we used in the present example.

- ▶ **myBoard.setTicks(dx, dy, xh, yh)** sets **x**-axis (**y**-axis) tick marks every **dx** (**dy**) units in the mathematical coordinate system and with height **xh** (**yh**) pixels.
- ▶ **myBoard.setGrid(dx, dy)** sets **x**-axis (**y**-axis) grid lines every **dx** (**dy**) units in the mathematical coordinate system.

#### Methods for drawing

- ▶ **myBoard.drawBoard()** and **myBoard.drawAxes()** draw the background rectangle and the coordinate axes.
- ▶ The colors of background and border are changed with **myBoard.changeBackColor(color)** and **myBoard.changeBorderColorAndThick(color, thick)**, and the color/thickness of the axes are changed with **myBoard.setAxesColorAndThick(color, thick)**.
- ▶ **myBoard.setCoordsBoxFormat(backcolor, bordercolor, fontcolor, fontsize)** sets the format of the box that shows the coordinates of the mouse. A similar method sets the format of the error message box that is more relevant when user input is used. Displaying coordinates at all can be disabled/enabled using **myBoard.disableCoordsDisp()** and **myBoard.enableCoordsDisp()**.
- ▶ **myBoard.drawGrid()**, **myBoard.drawTicks()**, and **myBoard.addLabels()** add gridlines, tickmarks and labels, respectively. Note that labels are automatically placed at tickmarks.

#### Other methods

- ▶ **myBoard.xtoPix(xval)**, **myBoard.xfromPix(xpix)**, **myBoard.ytoPix(yval)**, and **myBoard.yfromPix(ypix)** perform conversions between coordinates in the mathematical coordinate system, established by the **setVarsRanges** method, and the Flash pixel coordinate system, established by the class constructor.
- ▶ **myBoard.enableUserDraw(color, thick)** turns on (and **disableUserDraw()** turns off) **myBoard** allowing the user to draw with the mouse. Used in conjunction with **eraseUserDraw()** to remove the drawing without destroying the graphs on **myBoard**.