Exercises – Matrix Transformations

The following are transformation matrices.

For each one say whether it is translating, scaling and/or rotating, and by how much of each.

Now, extend your Matrix classes from the previous lesson to include:

* Methods for setting up the matrices as rotation matrices:
  + Matrix2 – setRotate(float angle)
  + Matrix3 – setRotateX(float angle), setRotateY(float angle), setRotateZ(float angle)
  + You may wish to add additional methods for:
    - Rotating a matrix by a set angle
    - Constructing a Matrix3 for all 3 angles at once, setRotate(float x, float y, float z)

Set up Homogeneous Vectors and Matrices for a 4x1 Vector and a Matrix4 (4x4). You will need to implement the Vector functions to make use of the additional W element.

The Matrix4 class will need to include the same methods as the Matrix3 class.

## Bootstrap and Matrices

Bootstrap includes sprite drawing functions within the Render2D class that include a matrix parameter, passed in as an array of floats (9-floats for a 3x3 matrix, 16 for a 4x4 matrix).

Test the functionality of your matrices within bootstrap. For example:

