Write your name and PID on the reverse!  

**Answer Key**

Let an affine transformation $A$ in $\mathbb{R}^2$ act on the "F" as shown:

(a) Give a $3 \times 3$ matrix representation for $A$ that acts on homogeneous coordinates.

\[
\begin{pmatrix}
0 & -1 & 0 \\
-2 & 0 & 1 \\
0 & 0 & 1
\end{pmatrix}
\]

(b) Give a sequence of (psuedo-)OpenGL commands that draw the transformed "F". You should choose from the following functions: `drawF()`, `glLoadIdentity()`, `glRotatef(-)`, `glScalef(-,-)`, and `glTranslatef(-,-)`.

```
glLoadIdentity();
glTranslatef(0,1);
glScalef(1,-2);
glRotatef(90);
drawF();
```

- or -
```
glLoadIdentity();
glTranslatef(0,1);
glRotatef(90);
glScalef(-2,1)
drawF();
```

Other answers are possible, but these two are the simplest.