

**CS 4/791E Computer Vision**  
**Spring 2004 - Dr. George Bebis**

**Homework 5**

**Due date: 4/29/04**

1. Consider the following camera model. Assume first that the camera and world coordinate systems are aligned. Next, the camera is translated by amount  $(0,2,2)$ , and it is rotated by an angle 90 degrees around the Z axis, followed by rotation of 45 degrees around the X axis. Both rotations are in clockwise directions. After that the image plane is displaced by amount  $(0.02, 0.01, 0.03)$  with respect to the camera center. Finally, perspective projection is applied to form the image. Assume that the focal length of the camera is 0.030. Find the image coordinates of the world point  $(1,1,0.2)$ .

2. Problem 7.3, page 172.

3. Problem 7.10, page 173.