HW #5
Due Thursday October 28th

Gonzalez & Woods

5.28 geometric transformations using triangular elements

Castleman

Chapter 8, #2: Let F(109,775)=113, F(109,776)=109, F(110,775)=105, and F(110,776)=103. What is F(110.27,776.44) obtained by nearest neighbor interpolation? By bilinear interpolation? Write the bilinear equation (Eq.2), showing the values of the coefficients. Draw a graph similar to Fig. 8-3.

Chapter 8, #5

Suppose you have two digitized images of a section of a city taken from the top of a tall building 25 years apart and you wish to display changes by projecting an overlay of the two images. You find a corner of a building that is located at 103,84 in the first image and at 107.94 in the second image, and a window that is located at 433,504 in the first image and at 377,439 in the second image. Has there been any (a) translation? (b) rotation? (c) change in scale? How much? Write the geometric transformation required to register the second image with the first. Assume that there has been no geometric transformation beyond translation, rotation, and change in scale.