

EE 4830 Digital Image Processing**Homework #1**

Due Date: Feb. 3rd 2005 (4:10pm).

Readings:

Chapter 1, 6.1-6.2 of G&W textbook
(especially Chapter 2, 6.1 and 6.2 of G&W)

Problem #1: (50%)

Choose one of the following two. (NOT Both)

- (a) Color mixing in the color space (See Problem 6.3 of G&W)
- (b) RGB to grey scale conversion (See Problem 6.7 of G&W)

Problem #2: (50%)

The following are several primary colors in the CIE RGB color system

	Red	Yellow	Green	Cyan	Blue	Magenta
R	1.0	1.0	0	0	0	1.0
G	0	1.0	1.0	1.0	0	0
B	0	0	0	1.0	1.0	1.0

(a) Use the conversion equations in Sec. 6.2 to convert these colors to the HSI space. Namely, compute the Hue, Saturation, and Intensity values of each color.

(b) If you are asked to compute the distance between any two colors, which color space will you use? What distance metrics will you use? Provide reasons for your answers.

Note there are no 'best' answers for this part of the question. Provide answers that you think are reasonable. Provide justification.