Joel Anna HW2: 1 of 4

Question 1:

To make a perceptually uniform intensity system with intensities $l_1 = 1, l_2, l_3, l_4, l_5 = 256$:

$$l_2 = 4, l_3 = 16, l_4 = 64$$

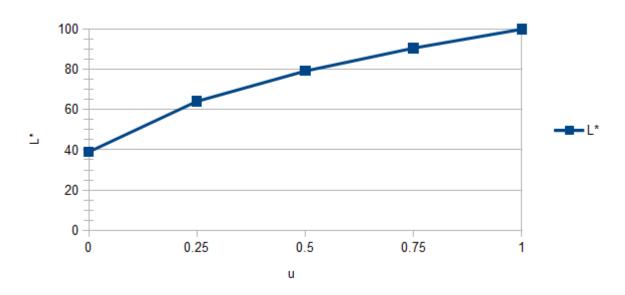
Question 2:

Succion 2.										
		RGB				XYZ			L*a*b*	
a.	(0.5,	0,	0)	(0.20	62,	0.1063,	0.0096	5) (38.95	5, 63.59,	53.35)
	(1,	1,	1)	(0.950)	05,	0.9998,	1.089	(99.99)	9, 0.04123,	-0.02846)
b.	u	u RGB								
	0	(0.5,		0,	0)					
	0.25	(0.625,	.25, (5, 0.25)						
	0.5	(0.75,	.5, 0.5)							
	0.75	(0.875,	75, 0.75)							
	1	(1,		1,	1)					
с.	u	XYZ								
	0	(0.2062)	2, (0.1063,	0.	00965)	(38.95,	63.59,	53.35)]
	0.25	(0.3923	3, (0.3297,	0	.2795)	(64.13,	26.86,	11.05)	
	0.5	(0.5784)	1, (0.5531,	0	.5493)	(79.22,	13.28,	4.947)]
	0.75	(0.7644)	1,	0.7764	, (0.8192)	(90.62,	5.430,	1.917)	
	1	(0.9505	5, ().9998,	1	1.089)	(99.99,	0.04123,	-0.02846)	

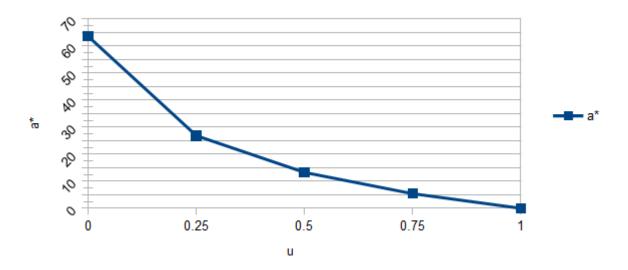
Joel Anna HW2: 2 of 4

d.

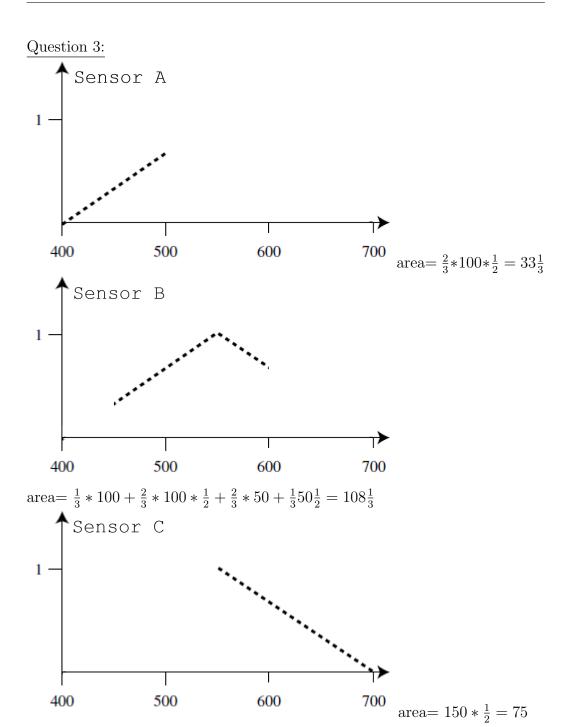
L* as a function of u



a* as a function of u



Joel Anna HW2: 3 of 4



Joel Anna HW2: 4 of 4

Question 4:

Question 5:

Id filter mask = $[a_0, a_1, ..., a_{i-1}]$ s.t. $a_j = C_j^{i-1}$

1d filtermask for 9:

m = [1, 8, 28, 56, 70, 56, 28, 8, 1]

9x9 filtermask: = M_{ij} =m[i]*m[j]

$$\begin{bmatrix} 1 & 8 & 28 & 56 & 70 & 56 & 28 & 8 & 1 \\ 8 & 64 & 224 & 448 & 560 & 448 & 224 & 64 & 8 \\ 28 & 224 & 784 & 1568 & 1960 & 1568 & 784 & 224 & 28 \\ 56 & 448 & 1568 & 3136 & 3920 & 3136 & 1568 & 448 & 56 \\ 70 & 560 & 1960 & 3920 & 4900 & 3920 & 1960 & 560 & 70 \\ 56 & 448 & 1568 & 3136 & 3920 & 3136 & 1568 & 448 & 56 \\ 28 & 224 & 784 & 1568 & 1960 & 1568 & 784 & 224 & 28 \\ 8 & 64 & 224 & 448 & 560 & 448 & 224 & 64 & 8 \\ 1 & 8 & 28 & 56 & 70 & 56 & 28 & 8 & 1 \end{bmatrix}$$