# Assignment on Fuzzy Logic in Image Processing.

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In the lecture we have discussed determination of color given the zone value and "a" value or "b" value. You may recollect this from the next slide. Slide 3 shows the membership function for "z" value corresponding to some typical variables z6,z7,z8 while slide 4 shows membership values for variable a for some typical variables a6,a7 and a8.

Based on rules given on slide 5, you have to work out the colors and their membership values for some typical values of "z" and "a" given on slide 6. .
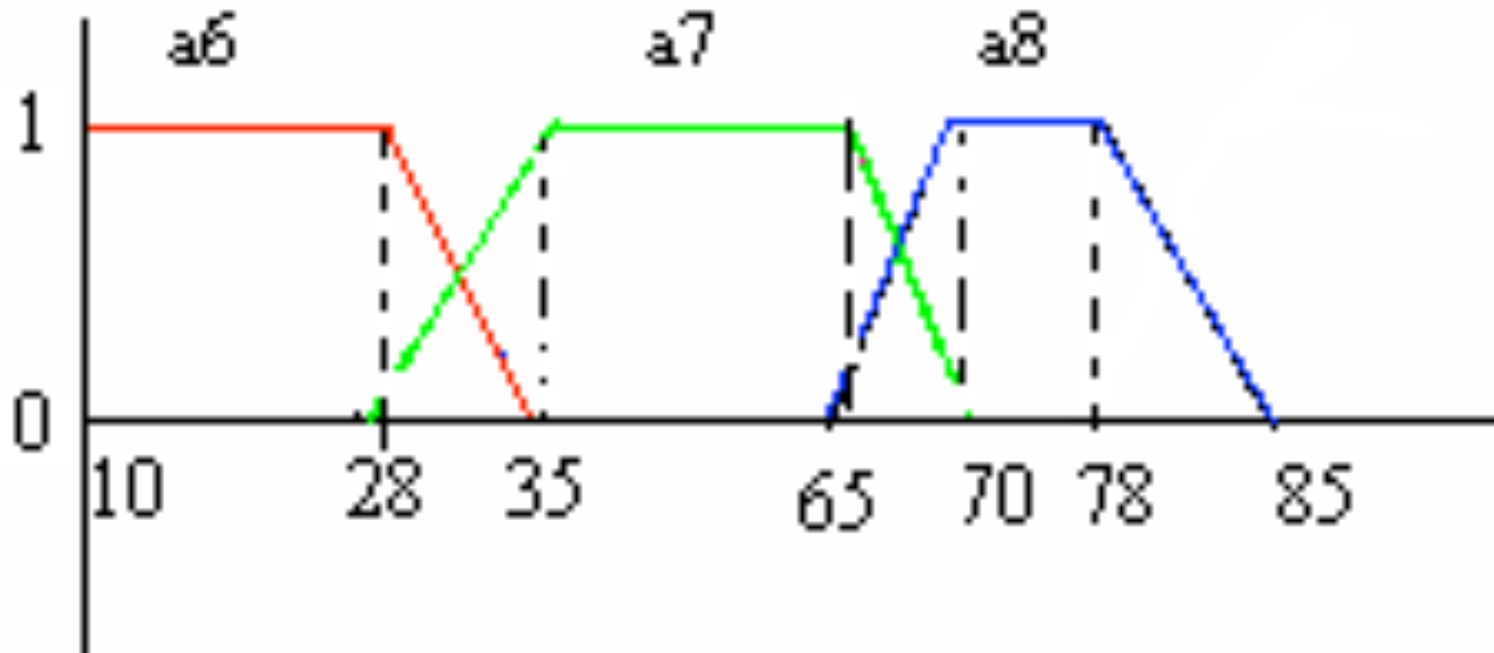
Zones in CIELAB Space
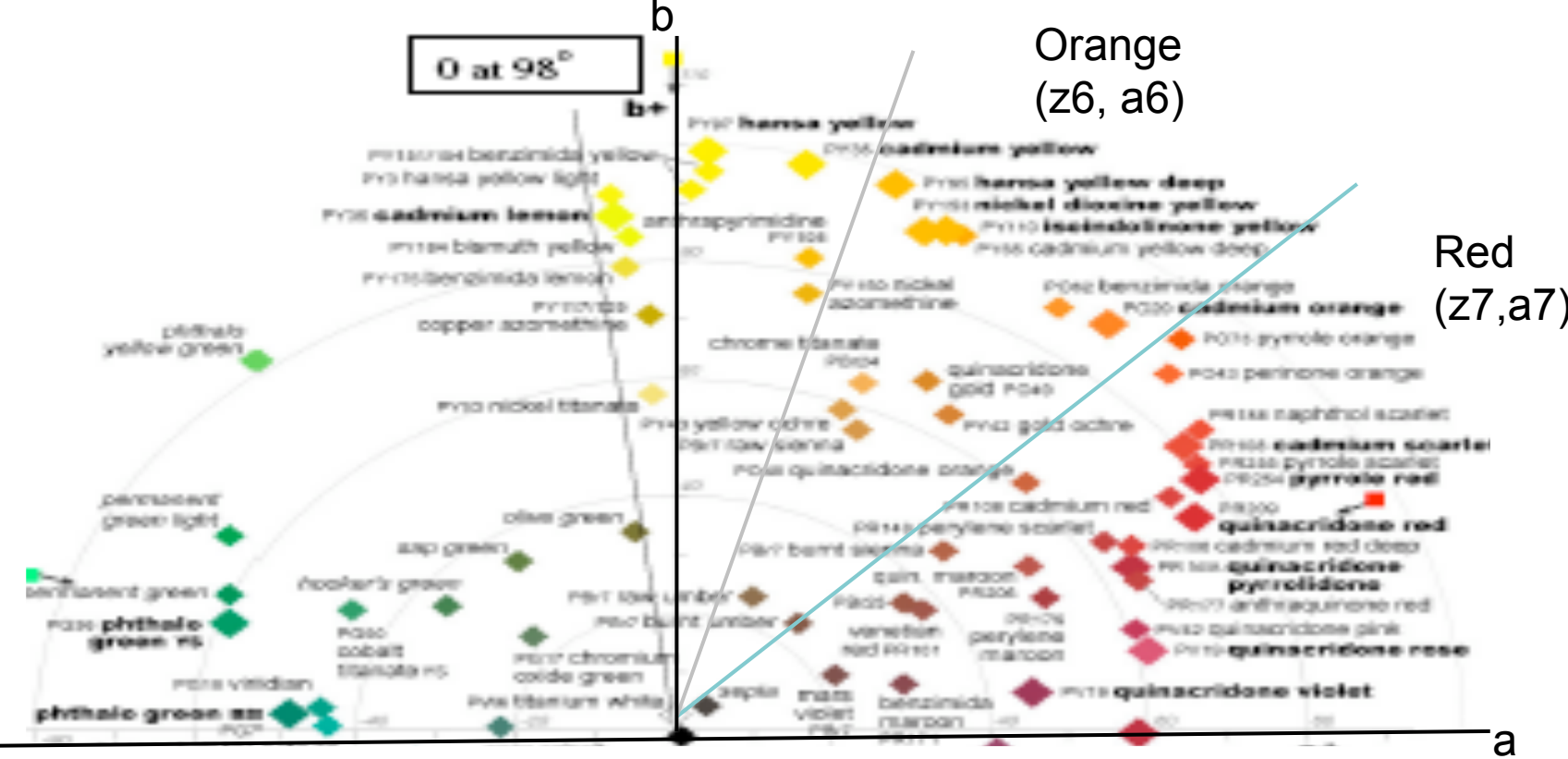
Membership function for zone z. There are 3 variables z6, z7, z8
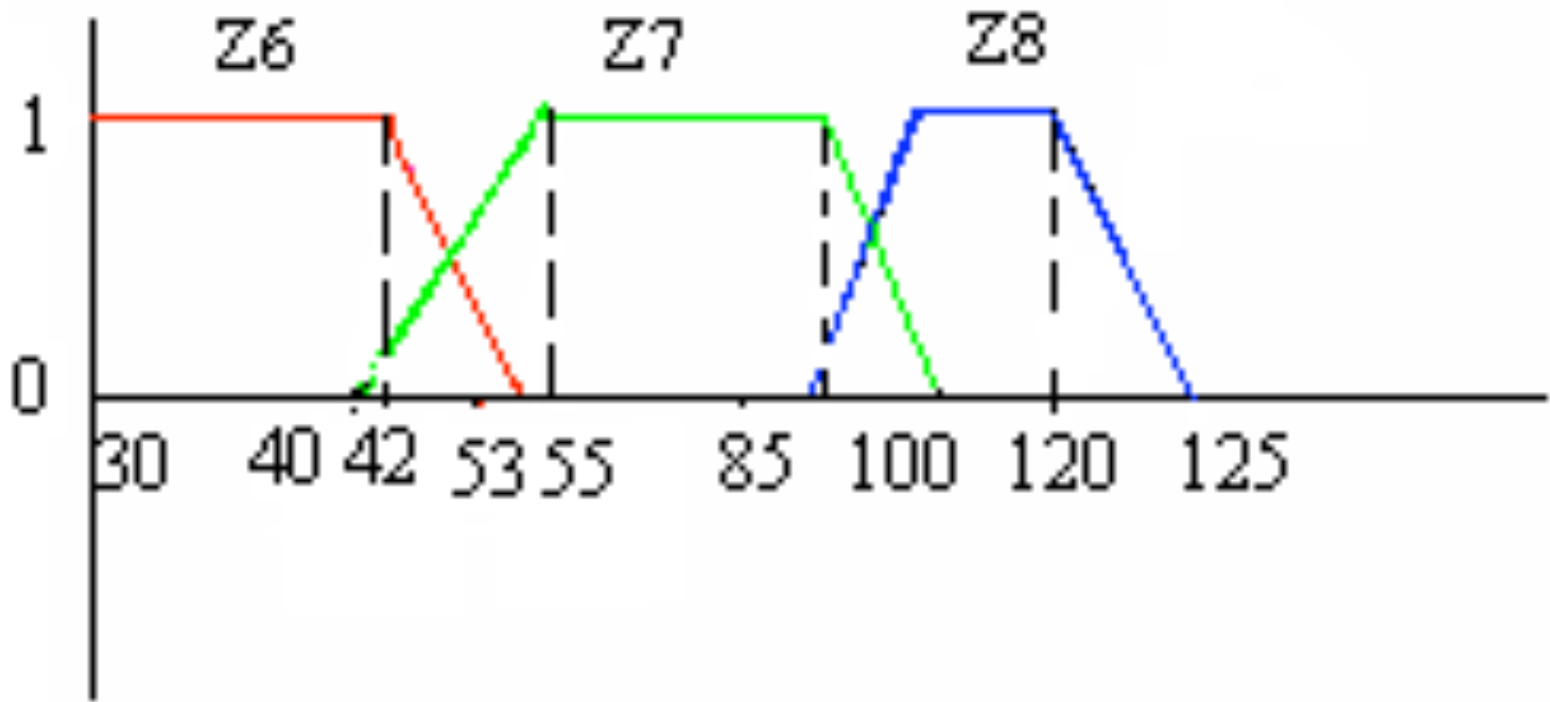
Membership function for value a. There are 3 variables a6, a7, a8

Example of Fuzzy Color Rule

- **Rule 1:** If zone is z6 and 'a' is a6 then color is light orange

- **Rule 2:** If zone is z7 and 'a' is a7 then color is red

- **Rule 3:** If zone is z8 and 'a' is a8 then color is pink

- **Rule 4:** If zone is z6 and 'a' is a7 then color is dark orange

Using the fuzzy rules and the membership functions, determine the color and its fuzzy value corresponding to following inputs:

a	z
30	40
50	45
25	50
33	45
67	85
50	35
81	122