6.10.

① $\alpha \leq 0.4$: $\{a, b, c, d, e\}$

② $0.4 < \alpha \leq 0.5$: $\{a, c, d, e\}$

③ $0.5 < \alpha \leq 0.7$ $\{c, d, e\}$

④ $0.7 < \alpha \leq 0.8$ $\{d, e\}$

⑤ $0.8 < \alpha \leq 1.0$ $\{e\}$

$\therefore$ $\{a, b, c, d, e\}$ $\{a, c, d, e\}$. $\{c, d, e\}$. $\{d, e\}$ and $\{e\}$

6.11.

Let $\beta < \alpha$

take any arbitrary element $x \in \alpha^A$. then $\mu_A(x) \geq \alpha$.

since $\beta < \alpha$. and $\mu_A(x) \geq \alpha$. then $\mu_A(x) > \beta$.

therefore $x \in \beta^A$

since x was an arbitrary element of α^A. then $\alpha^A \subseteq \beta^A$.

whenever $\beta < \alpha$

23. $Y = \{-3, -2, -1, 0, 1, 2, 3\}$

$\max(B_1', B_2', B_3') = \{0, 0.1, 0.6, 0.6, 0.7, 0.7, 0.2\}$

$\mu(y) = \{0, \frac{1}{7}, \frac{6}{7}, \frac{6}{7}, 1, 1, \frac{2}{7}\}$

output $= \frac{\sum_i y_i \mu(y_i)}{\sum_i \mu(y_i)} = \frac{9}{27} = 0.655$