

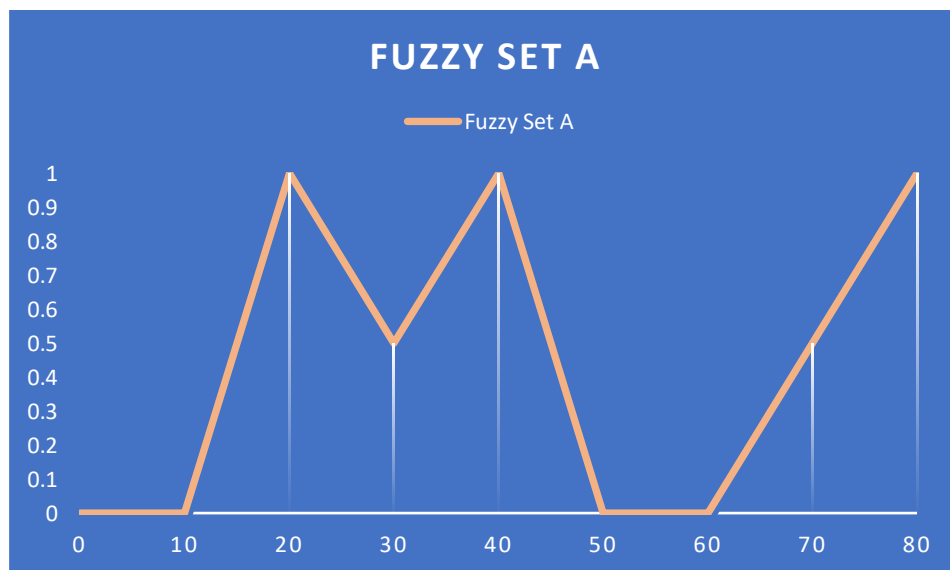
UTS SEMESTER GASAL 2021/2022

Mata Kuliah : Sistem Logika Fuzzy
Hari/Tanggal : Senin / 11 Oktober 2021
Waktu : WIB (90 menit)
Dosen : Prof. Rolly Intan, Dr.Eng.
Sifat : Terbuka

1. Let $Y = \{\{\}, \{\{a, \{b\}\}, c\}\}$, determine $\mathcal{P}^2(Y)$. (15 points)
2. Let $X = \{\mathcal{P}^2(Y), \{c, d, \{\}\}\}$, calculate $|\mathcal{P}(X)|$. (10 points)
3. Consider the fuzzy sets A defined on the interval $X = [0, 10]$ of real numbers by the membership grade functions

$$A(x) = \frac{x}{x + 2}$$

- a. Draw graphical membership function related to X. (15 points)
 - b. Determine mathematical formulas of ${}^\alpha A$ and ${}^{+\alpha} A$. (20 points)
4. Given A is a fuzzy set on $[0, 80]$ as shown in the following figure:



- a. Write mathematical formula of fuzzy set A. (20 points)
- b. Determine mathematical formulas of ${}^\alpha A$ and ${}^{+\alpha} A$. (20 points)

Good Luck!