



ChatGPT



For $AQI = 110$:

- $100 < AQI \leq 150$, so $\mu_{\text{unhealthy}}(110) = \frac{110-100}{50} = \frac{10}{50} = 0.2$.

3. Investment Risk

Given the membership function for the portfolio being "low risk":

$$\mu_{\text{low risk}}(V) = \begin{cases} 1 & \text{if } V \leq 0.1 \\ \frac{0.3-V}{0.2} & \text{if } 0.1 < V \leq 0.3 \\ 0 & \text{if } V > 0.3 \end{cases}$$

For $V = 0.25$:

- $0.1 < V \leq 0.3$, so $\mu_{\text{low risk}}(0.25) = \frac{0.3-0.25}{0.2} = \frac{0.05}{0.2} = 0.25$.

4. Soil Moisture Content

Given the membership function for soil moisture being "adequate":

$$\mu_{\text{adequate}}(M) = \begin{cases} 0 & \text{if } M \leq 20 \\ \frac{M-20}{10} & \text{if } 20 < M \leq 30 \\ 1 & \text{if } 30 < M < 40 \\ \frac{50-M}{10} & \text{if } 40 \leq M < 50 \\ 0 & \text{if } M \geq 50 \end{cases}$$

For $M = 35$:

- $30 < M < 40$, so $\mu_{\text{adequate}}(35) = 1$.

5. Customer Satisfaction

Given the membership function for the rating being "satisfied":

$$\mu_{\text{satisfied}}(R) = \begin{cases} 0 & \text{if } R \leq 4 \\ \frac{R-4}{2} & \text{if } 4 < R \leq 6 \\ 1 & \text{if } 6 < R < 8 \\ \frac{10-R}{2} & \text{if } 8 \leq R < 10 \end{cases}$$



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