

Нечеткие множества

Определить результат действий над нечеткими множествами.

Задача 10.1

$$\begin{aligned}A &= 0.7/a + 0.3/b + 0.2/c + 0.1/d; \\B &= 0.1/a + 0.3/b + 0.3/c + 0.8/d; \\C &= 0.7/a + 0.2/b + 0.3/c + 0.8/d; \\X &= \bar{A} \cup B, \quad Y = \text{CON}(A) \cup C \\X \cup Y &=?\end{aligned}$$

10.3

Задача 10.2

$$\begin{aligned}A &= 0.2/a + 0.7/b + 0.7/c + 0.1/d; \\B &= 0.1/a + 0.8/b + 0.1/c + 0.5/d; \\C &= 0.2/a + 0.7/b + 0.8/c + 0.5/d; \\X &= A \cup \bar{B}, \quad Y = \text{DIL}(CB), \\X \cap Y &=?\end{aligned}$$

10.3

Задача 10.3

$$\begin{aligned}A &= 0.2/a + 0.8/b + 0.8/c + 0.7/d; \\B &= 0.7/a + 0.7/b + 0.7/c + 0.4/d; \\C &= 0.2/a + 0.8/b + 0.7/c + 0.4/d; \\X &= A \cup \bar{B}, \quad Y = \text{DIL}(CB), \\X \cap Y &=?\end{aligned}$$

10.3

Задача 10.4

$$\begin{aligned}A &= 0.2/a + 0.4/b + 0.1/c + 0.9/d; \\B &= 0.9/a + 0.8/b + 0.4/c + 0.5/d; \\C &= 0.2/a + 0.1/b + 0.8/c + 0.5/d; \\X &= A \cup \bar{B}, \quad Y = \text{CON}(A \hat{+} C), \\X \cup Y &=?\end{aligned}$$

10.3

Задача 10.5

$$\begin{aligned}A &= 0.5/a + 0.6/b + 0.7/c + 0.5/d; \\B &= 0.5/a + 0.3/b + 0.8/c + 0.8/d; \\C &= 0.5/a + 0.7/b + 0.3/c + 0.8/d; \\X &= \bar{A} \cap B, \quad Y = \text{CON}(A \hat{+} C), \\X \cap Y &=?\end{aligned}$$

10.3

Задача 10.6

$$\begin{aligned}A &= 0.3/a + 0.5/b + 0.1/c + 0.5/d; \\B &= 0.5/a + 0.9/b + 0.6/c + 0.5/d; \\C &= 0.3/a + 0.1/b + 0.9/c + 0.5/d; \\X &= A \cup \bar{B}, \quad Y = \text{CON}(A \hat{+} C), \\X \cup Y &=?\end{aligned}$$

10.3

Задача 10.7

$$\begin{aligned}A &= 0.3/a + 0.5/b + 0.5/c + 0.4/d; \\B &= 0.4/a + 0.9/b + 0.2/c + 0.8/d; \\C &= 0.3/a + 0.5/b + 0.9/c + 0.8/d; \\X &= A \cup \bar{B}, \quad Y = \text{CON}(A \hat{+} C), \\X \cap Y &=?\end{aligned}$$

10.3

Задача 10.8

$$\begin{aligned}A &= 0.8/a + 0.4/b + 0.7/c + 0.1/d; \\B &= 0.1/a + 0.3/b + 0.4/c + 0.6/d; \\C &= 0.8/a + 0.7/b + 0.3/c + 0.6/d; \\X &= \bar{A} \cup B, \quad Y = \text{CON}(A \hat{+} C), \\X \cap Y &=?\end{aligned}$$

10.3

Задача 10.9

$$\begin{aligned}A &= 0.3/a + 0.6/b + 0.7/c + 0.4/d; \\B &= 0.4/a + 0.4/b + 0.4/c + 0.5/d; \\C &= 0.3/a + 0.7/b + 0.4/c + 0.5/d; \\X &= A \cup \bar{B}, \quad Y = \text{CON}(A \hat{+} C), \\X \cap Y &=?\end{aligned}$$

10.3

Задача 10.10

$$\begin{aligned}A &= 0.1/a + 0.9/b + 0.8/c + 0.4/d; \\B &= 0.4/a + 0.5/b + 0.4/c + 0.2/d; \\C &= 0.1/a + 0.8/b + 0.5/c + 0.2/d; \\X &= A \cup \bar{B}, \quad Y = \text{DIL}(CB), \\X \cap Y &=?\end{aligned}$$

10.3

Задача 10.11

$$\begin{aligned}A &= 0.8/a + 0.1/b + 0.1/c + 0.5/d; \\B &= 0.5/a + 0.9/b + 0.5/c + 0.9/d; \\C &= 0.8/a + 0.1/b + 0.9/c + 0.9/d; \\X &= \bar{A} \cup B, \quad Y = \text{CON}(A) \cup C \\X \cup Y &=?\end{aligned}$$

10.3

Задача 10.12

$$\begin{aligned}A &= 0.3/a + 0.9/b + 0.5/c + 0.2/d; \\B &= 0.2/a + 0.4/b + 0.6/c + 0.4/d; \\C &= 0.3/a + 0.5/b + 0.4/c + 0.4/d; \\X &= A \cup \bar{B}, \quad Y = \text{DIL}(CB), \\X \cap Y &=?\end{aligned}$$

10.3

Задача 10.13

$$\begin{aligned}
A &= 0.4/a + 0.8/b + 0.7/c + 0.5/d; \\
B &= 0.5/a + 0.6/b + 0.7/c + 0.3/d; \\
C &= 0.4/a + 0.7/b + 0.6/c + 0.3/d; \\
X &= \bar{A} \cap B, \quad Y = \text{DIL}(CB), \\
\bar{X} \cap Y &=?
\end{aligned}$$

10.3

Задача 10.15

$$\begin{aligned}
A &= 0.6/a + 0.4/b + 0.9/c + 0.2/d; \\
B &= 0.2/a + 0.8/b + 0.9/c + 0.9/d; \\
C &= 0.6/a + 0.9/b + 0.8/c + 0.9/d; \\
X &= \bar{A} \cap B, \quad Y = \text{CON}(A \hat{+} C), \\
\bar{X} \cap Y &=?
\end{aligned}$$

10.3

Задача 10.17

$$\begin{aligned}
A &= 0.5/a + 0.2/b + 0.3/c + 0.3/d; \\
B &= 0.3/a + 0.5/b + 0.1/c + 0.3/d; \\
C &= 0.5/a + 0.3/b + 0.5/c + 0.3/d; \\
X &= \bar{A} \cap B, \quad Y = \text{CON}(A) \cup C \\
X \cup Y &=?
\end{aligned}$$

10.3

Задача 10.19

$$\begin{aligned}
A &= 0.8/a + 0.2/b + 0.4/c + 0.3/d; \\
B &= 0.3/a + 0.6/b + 0.3/c + 0.7/d; \\
C &= 0.8/a + 0.4/b + 0.6/c + 0.7/d; \\
X &= \bar{A} \cup B, \quad Y = \text{CON}(A) \cup C \\
X \cap Y &=?
\end{aligned}$$

10.3

Задача 10.21

$$\begin{aligned}
A &= 0.3/a + 0.8/b + 0.4/c + 0.3/d; \\
B &= 0.3/a + 0.8/b + 0.5/c + 0.6/d; \\
C &= 0.3/a + 0.4/b + 0.8/c + 0.6/d; \\
X &= A \cup \bar{B}, \quad Y = \text{DIL}(CB), \\
X \cap Y &=?
\end{aligned}$$

10.3

Задача 10.23

$$\begin{aligned}
A &= 0.7/a + 0.2/b + 0.4/c + 0.3/d; \\
B &= 0.3/a + 0.3/b + 0.1/c + 0.2/d; \\
C &= 0.7/a + 0.4/b + 0.3/c + 0.2/d; \\
X &= \bar{A} \cup B, \quad Y = \text{CON}(A) \cup C \\
X \cap Y &=?
\end{aligned}$$

10.3

Задача 10.14

$$\begin{aligned}
A &= 0.5/a + 0.2/b + 0.5/c + 0.2/d; \\
B &= 0.2/a + 0.8/b + 0.8/c + 0.5/d; \\
C &= 0.5/a + 0.5/b + 0.8/c + 0.5/d; \\
X &= \bar{A} \cap B, \quad Y = \text{CON}(A) \cup C \\
X \cap Y &=?
\end{aligned}$$

10.3

Задача 10.16

$$\begin{aligned}
A &= 0.2/a + 0.9/b + 0.1/c + 0.6/d; \\
B &= 0.6/a + 0.9/b + 0.7/c + 0.8/d; \\
C &= 0.2/a + 0.1/b + 0.9/c + 0.8/d; \\
X &= A \cup \bar{B}, \quad Y = \text{DIL}(CB), \\
X \cup Y &=?
\end{aligned}$$

10.3

Задача 10.18

$$\begin{aligned}
A &= 0.8/a + 0.1/b + 0.9/c + 0.1/d; \\
B &= 0.1/a + 0.7/b + 0.3/c + 0.2/d; \\
C &= 0.8/a + 0.9/b + 0.7/c + 0.2/d; \\
X &= \bar{A} \cup B, \quad Y = \text{CON}(A) \cup C \\
\bar{X} \cap Y &=?
\end{aligned}$$

10.3

Задача 10.20

$$\begin{aligned}
A &= 0.6/a + 0.3/b + 0.9/c + 0.3/d; \\
B &= 0.3/a + 0.7/b + 0.7/c + 0.7/d; \\
C &= 0.6/a + 0.9/b + 0.7/c + 0.7/d; \\
X &= \bar{A} \cap B, \quad Y = \text{CON}(A) \cup C \\
\bar{X} \cap Y &=?
\end{aligned}$$

10.3

Задача 10.22

$$\begin{aligned}
A &= 0.8/a + 0.4/b + 0.6/c + 0.3/d; \\
B &= 0.3/a + 0.4/b + 0.1/c + 0.2/d; \\
C &= 0.8/a + 0.6/b + 0.4/c + 0.2/d; \\
X &= \bar{A} \cup B, \quad Y = \text{CON}(A \hat{+} C), \\
X \cap Y &=?
\end{aligned}$$

10.3

Задача 10.24

$$\begin{aligned}
A &= 0.1/a + 0.5/b + 0.1/c + 0.3/d; \\
B &= 0.3/a + 0.8/b + 0.3/c + 0.5/d; \\
C &= 0.1/a + 0.1/b + 0.8/c + 0.5/d; \\
X &= A \cup \bar{B}, \quad Y = \text{CON}(A \hat{+} C), \\
X \cup Y &=?
\end{aligned}$$

10.3

Задача 10.25

$$\begin{aligned}
A &= 0.6/a + 0.1/b + 0.8/c + 0.1/d; \\
B &= 0.1/a + 0.4/b + 0.8/c + 0.6/d; \\
C &= 0.6/a + 0.8/b + 0.4/c + 0.6/d; \\
X &= \bar{A} \cap B, \quad Y = \text{CON}(A) \cup C \\
\bar{X} \cap Y &=?
\end{aligned}$$

10.3

Задача 10.27

$$\begin{aligned}
A &= 0.4/a + 0.9/b + 0.8/c + 0.9/d; \\
B &= 0.9/a + 0.6/b + 0.3/c + 0.9/d; \\
C &= 0.4/a + 0.8/b + 0.6/c + 0.9/d; \\
X &= \bar{A} \cap B, \quad Y = \text{DIL}(CB), \\
\bar{X} \cap Y &=?
\end{aligned}$$

10.3

Задача 10.29

$$\begin{aligned}
A &= 0.8/a + 0.7/b + 0.4/c + 0.8/d; \\
B &= 0.8/a + 0.1/b + 0.4/c + 0.6/d; \\
C &= 0.8/a + 0.4/b + 0.1/c + 0.6/d; \\
X &= \bar{A} \cup B, \quad Y = \text{DIL}(CB), \\
X \cap Y &=?
\end{aligned}$$

10.3

Задача 10.31

$$\begin{aligned}
A &= 0.5/a + 0.4/b + 0.4/c + 0.9/d; \\
B &= 0.9/a + 0.3/b + 0.9/c + 0.7/d; \\
C &= 0.5/a + 0.4/b + 0.3/c + 0.7/d; \\
X &= \bar{A} \cap B, \quad Y = \text{CON}(A \hat{+} C), \\
X \cap Y &=?
\end{aligned}$$

10.3

Задача 10.26

$$\begin{aligned}
A &= 0.4/a + 0.9/b + 0.1/c + 0.3/d; \\
B &= 0.3/a + 0.5/b + 0.4/c + 0.1/d; \\
C &= 0.4/a + 0.1/b + 0.5/c + 0.1/d; \\
X &= \bar{A} \cap B, \quad Y = \text{DIL}(CB), \\
X \cup Y &=?
\end{aligned}$$

10.3

Задача 10.28

$$\begin{aligned}
A &= 0.1/a + 0.1/b + 0.8/c + 0.9/d; \\
B &= 0.9/a + 0.7/b + 0.7/c + 0.3/d; \\
C &= 0.1/a + 0.8/b + 0.7/c + 0.3/d; \\
X &= A \cup \bar{B}, \quad Y = \text{CON}(A) \cup C \\
\bar{X} \cap Y &=?
\end{aligned}$$

10.3

Задача 10.30

$$\begin{aligned}
A &= 0.4/a + 0.5/b + 0.1/c + 0.2/d; \\
B &= 0.2/a + 0.2/b + 0.3/c + 0.4/d; \\
C &= 0.4/a + 0.1/b + 0.2/c + 0.4/d; \\
X &= \bar{A} \cap B, \quad Y = \text{CON}(A \hat{+} C), \\
X \cup Y &=?
\end{aligned}$$

10.3

Задача 10.32

$$\begin{aligned}
A &= 0.4/a + 0.2/b + 0.5/c + 0.7/d; \\
B &= 0.7/a + 0.6/b + 0.3/c + 0.8/d; \\
C &= 0.4/a + 0.5/b + 0.6/c + 0.8/d; \\
X &= \bar{A} \cap B, \quad Y = \text{CON}(A) \cup C \\
X \cap Y &=?
\end{aligned}$$

10.3

Нечеткие множества

	X				Y				
1	0.3	0.7	0.8	0.9	0.7	0.2	0.3	0.8	$0.70/a+0.70/b+0.80/c+0.90/d$
2	0.9	0.7	0.9	0.5	0.14	0.75	0.28	0.5	$0.10/a+0.30/b+0.10/c+0.50/d$
3	0.3	0.8	0.8	0.7	0.37	0.75	0.7	0.4	$0.37/a+0.20/b+0.20/c+0.30/d$
4	0.2	0.4	0.6	0.9	0.13	0.21	0.67	0.9	$0.20/a+0.40/b+0.67/c+0.90/d$
5	0.5	0.3	0.3	0.5	0.56	0.77	0.62	0.81	$0.50/a+0.70/b+0.62/c+0.50/d$
6	0.5	0.5	0.4	0.5	0.26	0.3	0.83	0.56	$0.50/a+0.50/b+0.83/c+0.56/d$
7	0.6	0.5	0.8	0.4	0.26	0.56	0.9	0.77	$0.26/a+0.50/b+0.80/c+0.40/d$
8	0.2	0.6	0.4	0.9	0.92	0.67	0.62	0.41	$0.80/a+0.40/b+0.60/c+0.10/d$
9	0.6	0.6	0.7	0.5	0.26	0.77	0.67	0.49	$0.26/a+0.40/b+0.30/c+0.49/d$
10	0.6	0.9	0.8	0.8	0.2	0.63	0.45	0.2	$0.20/a+0.10/b+0.20/c+0.20/d$
11	0.5	0.9	0.9	0.9	0.8	0.1	0.9	0.9	$0.80/a+0.90/b+0.90/c+0.90/d$
12	0.8	0.9	0.5	0.6	0.24	0.45	0.49	0.4	$0.24/a+0.45/b+0.49/c+0.40/d$
13	0.5	0.2	0.3	0.3	0.45	0.65	0.65	0.3	$0.45/a+0.65/b+0.65/c+0.30/d$
14	0.2	0.8	0.5	0.5	0.5	0.5	0.8	0.5	$0.20/a+0.50/b+0.50/c+0.50/d$
15	0.2	0.6	0.1	0.8	0.7	0.88	0.96	0.85	$0.71/a+0.40/b+0.90/c+0.20/d$
16	0.4	0.9	0.3	0.6	0.35	0.3	0.8	0.8	$0.40/a+0.90/b+0.79/c+0.80/d$
17	0.3	0.5	0.1	0.3	0.5	0.3	0.5	0.3	$0.50/a+0.50/b+0.50/c+0.30/d$
18	0.2	0.9	0.3	0.9	0.8	0.9	0.81	0.2	$0.80/a+0.10/b+0.70/c+0.10/d$
19	0.3	0.8	0.6	0.7	0.8	0.4	0.6	0.7	$0.30/a+0.40/b+0.60/c+0.70/d$
20	0.3	0.7	0.1	0.7	0.6	0.9	0.81	0.7	$0.60/a+0.30/b+0.81/c+0.30/d$
21	0.7	0.8	0.5	0.4	0.3	0.57	0.63	0.6	$0.30/a+0.57/b+0.50/c+0.40/d$
22	0.3	0.6	0.4	0.7	0.92	0.58	0.58	0.2	$0.30/a+0.58/b+0.40/c+0.19/d$
23	0.3	0.8	0.6	0.7	0.7	0.4	0.3	0.2	$0.30/a+0.40/b+0.30/c+0.20/d$
24	0.7	0.5	0.7	0.5	0.04	0.3	0.67	0.42	$0.70/a+0.50/b+0.70/c+0.50/d$
25	0.1	0.4	0.2	0.6	0.6	0.8	0.64	0.6	$0.60/a+0.60/b+0.64/c+0.40/d$
26	0.3	0.1	0.4	0.1	0.35	0.22	0.45	0.1	$0.35/a+0.22/b+0.45/c+0.10/d$
27	0.6	0.1	0.2	0.1	0.6	0.7	0.42	0.9	$0.40/a+0.69/b+0.42/c+0.90/d$
28	0.1	0.3	0.8	0.9	0.1	0.8	0.7	0.81	$0.10/a+0.70/b+0.20/c+0.10/d$
29	0.8	0.3	0.6	0.6	0.8	0.2	0.2	0.6	$0.80/a+0.20/b+0.20/c+0.60/d$
30	0.2	0.2	0.3	0.4	0.41	0.3	0.08	0.27	$0.41/a+0.30/b+0.30/c+0.40/d$
31	0.5	0.3	0.6	0.1	0.56	0.41	0.34	0.94	$0.50/a+0.30/b+0.34/c+0.10/d$
32	0.6	0.6	0.3	0.3	0.4	0.5	0.6	0.8	$0.40/a+0.50/b+0.30/c+0.30/d$