

Name .....

		row	....	col....
1.	2.	3.	4	$\Sigma$

1. Find  $x$  such that the following is true (there might be more than one proper answers)

a)  $\{0, \{1, x\}\} \in \{\{0, \{1\}\}, \{0, \{0, 1\}\}, 0, \{\{0\}, 1\}\}$

b)  $\{0, \{1, x\}\} \subseteq \{\{0, \{1\}\}, \{0, \{0, 1\}\}, 0, \{\{0\}, 1\}\}$

2. Prove or disprove  $(B \setminus C) \cup [(A \cap C) \setminus B] = [B \cup (A \cap C)] \setminus (B \cap C)$

3. Prove or disprove

$$\mathcal{P}(X) \div \mathcal{P}(Y) \subseteq \mathcal{P}(X \div Y)$$

4. Prove or disprove

$$A \cap (B \cup C) = [(A \cap C) \setminus B] \cup [(A \cap B) \setminus C]$$

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b)  $\{0, \{0, x\}\} \subset \{\{0, \{0\}\}, \{0, \{0, 1\}\}, 0, \{\{0\}\}\}$

2. Prove or disprove

$$(B \setminus A) \cup [(A \cap C) \setminus B] = [B \cup (A \cap C)] \setminus (B \cap A)$$

3. Prove or disprove

$$\mathcal{P}(X \div Y) \subseteq \mathcal{P}(X) \div \mathcal{P}(Y)$$

4. Prove or disprove

$$B \cap (A \cup C) = [(B \cap C) \setminus A] \cup [(A \cap B) \setminus C]$$