Name ..... FA.... row .... col....

1.	2.	3.	4.	$\sum$

1. Write the mathematical formulas corresponding to the following statements with the help of the following signs only: propositional connectives, quantifiers, variables varying through set $\mathbb{R}$ and symbols indicated in brackets

there exists a quadratic polynomial with two roots that are both positive or both negative$(\cdot, +, =, <, 0)$

2. For what numbers $x \in \mathbb{N}$ the following holds.

$\{\{3, x\}, \{5, x, 8\} \subseteq \{\{3\}, \{5, 8\}, \{3, 5, 8\}, \{3, 8\}, \{3, 5, 9\}\}$

3.Find:

$\bigcap_{i\in\mathbb{N}_+}[1 + \frac{1}{2i}, 5 - \frac{1}{i}) \times [1 - \frac{1}{2i}, 5 - \frac{1}{i}] =$

$\left(\bigcup_{i\in\mathbb{N}_+}[1 + \frac{1}{2i}, 5 - \frac{1}{i})\right) \times \left(\bigcup_{i\in\mathbb{N}_+}[1 - \frac{1}{2i}, 5 - \frac{1}{i}]\right) =$

4. Prove or disprove

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

b) $(A \cup B) \div (C \cup B) = (A \div C) \cup B$

Name ..... FA.... row .... col....

1.	2.	3.	4.	$\sum$

1. Write the mathematical formulas corresponding to the following statements with the help of the following signs only: propositional connectives, quantifiers, variables varying through set $\mathbb{R}$ and symbols indicated in brackets

there exists a quadratic polynomial with two roots of different signs$(\cdot, +, =, <, 0)$

2. For what numbers $x \in \mathbb{N}$ the following holds.

$\{\{3, x\}, \{5, x, 8\} \subseteq \{\{3\}, \{5, 8\}, \{3, 5, 8\}, \{3, 5\}, \{3, 5, 9\}\}$

3.Find:

$\bigcap_{i\in\mathbb{N}_+}[1 - \frac{1}{3i}, 5 - \frac{1}{i}) \times [1 + \frac{1}{3i}, 5 - \frac{1}{i}] =$

$\left(\bigcup_{i\in\mathbb{N}_+}[1 - \frac{1}{3i}, 5 - \frac{1}{i})\right) \times \left(\bigcup_{i\in\mathbb{N}_+}[1 + \frac{1}{3i}, 5 - \frac{1}{i}]\right) =$

4. Prove or disprove

a) $(A \cup B) \div (B \cup C) = (A \div C) \setminus B$

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

Name ..... FA.... row .... col....

1.	2.	3.	4.	$\sum$

1. Write the mathematical formulas corresponding to the following statements with the help of the following signs only: propositional connectives, quantifiers, variables varying through set $\mathbb{R}$ and symbols indicated in brackets

there exists a quadratic polynomial with no negative roots$(\cdot, +, =, <, 0)$

2. For what numbers $x \in \mathbb{N}$ the following holds. $\{\{3, x\}, \{5, x\} \subseteq \{\{3\}, \{5, 8\}, \{3, 5, 8\}, \{3, 5\}, \{3, 8\}, \{3, 5, 9\}\}$

3.Find:

$\bigcap_{i\in\mathbb{N}_+}[1 + \frac{1}{2i}, 5 + \frac{1}{2i}) \times [1 - \frac{1}{2i}, 5 + \frac{1}{2i}] =$

$\left(\bigcup_{i\in\mathbb{N}_+}[1 + \frac{1}{2i}, 5 + \frac{1}{2i})\right) \times \left(\bigcup_{i\in\mathbb{N}_+}[1 - \frac{1}{2i}, 5 + \frac{1}{2i}]\right) =$

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

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