Name ....

EA.... 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 $\mathbb{N}$ and symbols indicated in brackets

all primes except one are odd$(\cdot, +, =, 1)$

2. Prove or disprove $(x, y, z \in \mathbb{R})$

$\exists x \forall z \forall y \; z \cdot y \neq x$

3. Proof by induction that sequence $a_n = 3^n - 2^n$ is the solution of the recurrence

$a_n = 5a_{n-1} - 6a_{n-2}, a_0 = 0, a_1 = 1.$

4. For how many assignments the formula is true? Transform it into DNF form (e.i. $(x_1 \wedge x_2 \wedge x_3) \vee$ (..)... $\vee$ (...) where x_i are variable or their negations)

$$[(p \Leftrightarrow q) \Rightarrow r] \Rightarrow [(p \Rightarrow q) \wedge (q \Rightarrow r)]$$

Name ....

EA.... 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 $\mathbb{N}$ and symbols indicated in brackets
there is no largest prime$(\cdot, +, =, 1)$

2. Prove or disprove $(x, y, z \in \mathbb{R})$

$\forall x \forall y \exists z \; z \cdot y = x$

3. Proof by induction that sequence $a_n = 3^n - 2^n$ is the solution of the recurrence
$a_n = 8a_{n-1} - 15a_{n-2}, a_0 = 0, a_1 = 2.$

4. For how many assignments the formula is true? Transform it into DNF form (e.i. $(x_1 \wedge x_2 \wedge x_3) \vee (..)... \vee (...)$ where x_i are variable or their negations)

$$[(p \Rightarrow q) \wedge (q \Rightarrow r)] \Rightarrow [(p \Leftrightarrow q) \Rightarrow r]$$