Name

| GA row col | | | | |
|------------|----|----|----|--------|
| 1a | 1b | 2. | 3. | \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

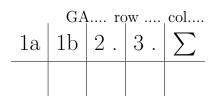
a) odd number has odd divisors $only(\cdot,+,=,1)$

b) a sum of any number and its square is $even(\cdot,+,=,1,<)$

2. Proof by induction $3|10^n + 7^n - 5.$ 3. For how many assignments the formula is true? Transform it into DNF form (e.i. $(x_1 \land x_2 \land x_3) \lor$ (..)... \lor (...) where x_i are variable or their negations)

$$[(p \lor q) \Rightarrow (q \lor r)] \Rightarrow [(p \Rightarrow q) \land \sim r]$$

Name



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

a) not every even number has only even $\mathit{divisors}(\cdot,+,=,1)$

b) product of any two consecutive numbers is even $(\cdot,+,=,1,<)$

2. Proof by induction $3|13^n + 10^n + 1.$ 3. For how many assignments the formula is true? Transform it into DNF form (e.i. $(x_1 \land x_2 \land x_3) \lor$ (..)... \lor (...) where x_i are variable or their negations)

$$[(p \vee \sim q) \Rightarrow (q \vee r)] \Rightarrow [(p \Rightarrow q) \wedge r]$$