

Name

	DA....	row	col....	
1.	2.	3.	4.	Σ

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

every square root of an odd number is odd ($\cdot, +, =, 1$)

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

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

3. Proof by induction

$$14 | 3^{4n+2} + 5^{2n+1}$$

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

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

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1.	2.	3.	4.	Σ

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

every square root of an even number is even($\cdot, +, =, 1$)

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

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

3. Proof by induction

$$25 \mid 2^{n+2} \cdot 3^n + 5n - 4$$

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

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