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

1.	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) *square of an even number is even*$(\cdot, +, =, 1)$

b) *there is no prime number divisible by 6*$(\cdot, +, =, 1, 6)$

2. Proof by induction

$1^2 - 2^2 + 3^2 - 4^2 + \ldots (-1)^{n-1} n^2 = (-1)^{n-1} \frac{n(n+1)}{2}$

3. Is the following formula a tautology? Transform it into CNF form (e.i. $(x_1 \vee x_2 \vee x_3) \wedge (..) ... \wedge (...)$ where x_i are variable or their negations)
$(p \Leftrightarrow q) \Rightarrow [(\sim p \Rightarrow q) \wedge (p \Rightarrow \sim q)]$