

RZ: edit the provided LyX file next time, it had a macro for \mathbb{N}

1 Question Define a binary property $p(x, y)$ over natural numbers such that we have both

* \mathbb{N} - Natural Number - Sir, I couldn't find the symbol of Natural number in my LYX Software...

1. $\forall x \in \mathbb{N}. \exists y \in \mathbb{N}. p(x, y)$
2. $\neg \exists y \in \mathbb{N}. \forall x \in \mathbb{N}. p(x, y)$

Answer:

$$p(x, y) = \begin{cases} x = y, & \text{false Otherwise} \end{cases}$$

1. If I describe the first question then it says that ALL x BELONGS TO NATURAL NUMBERS AND SOME OF y BELONGS TO NATURAL NUMBERS. **RZ:** and $p(x, y)$

That indicates that the numbers in the x , there is a number y , so first statement is true. **RZ:** you forgot $p(x, y)$?

2. The second question describes that NONE OF y BELONGS TO NATURAL NUMBERS, SUCH THAT ALL x BELONGS TO NATURAL NUMBERS. That indicates that x is not equals to y , so the second statement is also true.