Mathematical logic, Fall 2023

Assignment #1

Each group must return a paper endorsed by all members.
(Chaque groupe doit rendre un devoir signé par tous ses membres.)

Exercise 1. Give the truth table of $(P \Rightarrow Q) \wedge (P \vee \neg R)$.

Exercise 2. Give the negation (in English) of:

'Gödel shaves Tarski if and only if Tarski shaves Gödel.'

Exercise 3.

1. Write in English:

$$(\forall x \in \mathbb{R})(\forall k \in \mathbb{N}_{>0})(\exists y \in \mathbb{R})(x > 0 \Rightarrow x = y^n).$$

2. Write in symbols:

'Every natural number is a sum of four squares of integers.'

3. Give the negation of formula 1: first in symbols, then in English.

4. Give the negation of sentence 2: first in English, then in symbols.