Written HW18 – MATH 2510 Sping 2023

Recall that the Gödel numbering is a way to assign numbers to sentences of first order logic. Consider the following assignment of numbers to the symbols of first-order logic:

Symbol	Number
$\forall$	1
x	2
y	3
(	4
)	5
F	6
$\rightarrow$	7
a	8
$\wedge$	9

Recall that we assign a sentence to a number by writing out the exponents in $2^{\#}3^{\#}5^{\#}\dots p_n^{\#}$ where p_n is the nth prime number and the exponents are the values associated to each symbol, in order, from the table.

1. Find the Gödel number for the sentence $\forall x \forall y(F(x) \rightarrow F(y))$
2. What expression is encoded by the Gödel number 11672718750? (*hint: factor it and reverse engineer the encoding*). The expression you arrive at will be nonsensical.