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First order logic also known as predicate logic has two fundamental operators or connectives:

Existential quantifier : there exists : ∃
Universal quantifier : for all : ∀

For Example :

∀x, ∃N, ∃y | y>x
∃y∈N | ∀ x∈N, y>x

Lim x x^2-6x-7 / x-7 = 8
x->7

For the limit we can factorize it as:
Lim (x + 5) (x -1)
x→1 x - 1
Lim (x + 5)
x→1

The limit of the above as (x) tends to 1 will be equal to 6. So, if we go close to 6, let's say:
7.5 - 8.5 ε = 0.5
7.9 - 8.1 ε = 0.1
7.999 -8.001 ε = 0.001

¬ (∃x, P(x)) ≡ (∀x, ¬P(x))
∀x = 10y|y∈N|p≤y| P is Prime = 4y

Proof by Counter Example :

I. ¬ (∀x P(x)) ≡ (∃x,¬P(x))
II. ¬ (∃x, P(x)) ≡ (∀x, ¬P(x))

Statement - If p , then q .
Converse - If q , then p .
Inverse - If not p , then not q .
Contrapositive - If not q , then not p .

- **Converse :**

To form the converse of the conditional statement, interchange the hypothesis and the conclusion.
The **converse** of "If it rains, then they cancel school" is "If they cancel school, then it rains."

- **Inverse :**

To form the inverse of the conditional statement, take the negation of both the hypothesis and the conclusion.
The **inverse** of “If it rains, then they cancel school” is “If it does not rain, then they do not cancel school.”

- **Contrapositive :**

To form the contrapositive of the conditional statement, interchange the hypothesis and the conclusion of the inverse statement.
The **contrapositive** of "If it rains, then they cancel school" is "If they do not cancel school, then it does not rain."

- **For example :**

Statement :- If two angles are congruent, then they have the same measure.

Converse :- If two angles have the same measure, then they are congruent.
Inverse :- If two angles are not congruent, then they do not have the same measure.
Contrapositive :- If two angles do not have the same measure, then they are not congruent.