1086-VO-1591 **Bao Qi Feng*** (`bfeng@kent.edu`), The Department of Mathematical Sciences, Kent State University at Tuscarawas, New Philadelphia, OH 44663. *There is an infinite number of twin primes: An application of set theory.* Preliminary report.

In this article, we construct a basic set of I_0:

$$I_0 = \{(\alpha, \alpha + 2) : \alpha \in N\},$$

a set of all pairs of two integers, in which the first coordinate belongs to the natural number set N, and the second coordinator is adding 2 to the first coordinator always. Then, classifying all elements of I_0 by the least prime factor criterion to get an infinite number of nonempty subsets $I_k,\ k \geq 1$, in I_0. Let $t_k = \min I_k,\ k \geq 1$. Thus, the process of proving the Conjecture of Twin Primes consists of the following four statements:

1.$I_{k-1} \supset I_k,\ k \geq 1$. It implies the sequence of numbers $\{t_k\}$ is an non-decreasing;

2.Under the condition of $I_k\{p_{k+1}^2 - 3\} \neq \phi,\ t_k$ is a pair twin primes, for all $k \geq 1$;

3.The sequence of numbers $\{t_k\}$ has a strict increasing infinite subsequence;

4.$I_k\{p_{k+1}^2 - 3\} \neq \phi$, for all $k \geq 1$.

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