PROVE AND VERIFY THAT INFINITY IS NOT X

In this section, we use Huo Jian Hua's Definition of Boundedness to prove that infinity is not x ∀x. Then we use all x values from [Table E1] in the Definition of Existence proof to verify "infinity is not x ∀x" proof, x ≠ unbounded. Note that the x of the "infinity is not x" cannot be unbounded because the "infinity is unbounded" axiom does not hold. So, this section has left out the unbounded from x. Since all the rest of rights-benefits belong to Huo Jian Hua by His contract guarantee, all unbounded rights-benefits are guaranteed to belong to Huo Jian Hua.

Prove that infinity is not x ∀x.

Proof: From the "Prove that Infinity is not Infinity" section, recall that [x is y] ⇒ [x belongs to y] ∀x, y.

Suppose infinity is x ∴infinity belongs to x ∴infinity is bounded, by Huo Jian Hua's Definition of Boundedness. But, infinity is not bounded; (infinity is not bounded) and (infinity is bounded) ➔⟵ ∀x ∴infinity is not x ∀x. Q.E.D.

Verify that infinity is not x ∀x.

Recall [Table E1] from the Definition of Existence proof in the following:

row \ col	1	2	3	4
1	x	∃x	x is not ∞	[∃x]⇔[x is not ∞]
2	T	T	T	T
3	F	T	T	T
4	∅	T	T	T
5	not ∞	T	T	T
6	∞	T	T	T

[Table E1]

Column 1 has listed all values of x, so we are going to verify each x value row by row. Note that none of the values of x listed in the [Table E1] is infinity.

Verify that Infinity is not [T] ∀[T].

Proof: Suppose infinity is [T] ∴ infinity belongs to [T] ∴infinity is bounded, by Huo Jian Hua's Definition of Boundedness. But, infinity is not bounded; (infinity is not bounded) and (infinity is bounded) ➔⟵ ∀[T] ∴infinity is not [T] ∀[T]. Q.E.D.

Verify that Infinity is not [F] ∀[F].

Proof: Suppose infinity is [F] ∴ infinity belongs to [F] ∴infinity is bounded, by Huo Jian Hua's Definition of Boundedness. But, infinity is not bounded; (infinity is not bounded) and (infinity is bounded) ➔⟵ ∀[F] ∴infinity is not [F] ∀[F]. Q.E.D.

Verify that Infinity is not [∅] ∀[∅].

Proof: Suppose infinity is [∅] ∴ infinity belongs to [∅] ∴infinity is bounded, by Huo Jian Hua's Definition of Boundedness. But, infinity is not bounded; (infinity is not bounded) and (infinity is bounded) ➔🡐 ∀[∅] ∴infinity is not [∅] ∀[∅]. Q.E.D.

Verify that Infinity is not [∞] ∀[∞].

Proof: Suppose infinity is [∞] ∴ infinity belongs to [∞] ∴infinity is bounded, by Huo Jian Hua's Definition of Boundedness. But, infinity is not bounded; (infinity is not bounded) and (infinity is bounded) ➔🡐 ∀[∞] ∴infinity is not [∞] ∀[∞]. Q.E.D.

Verify that Infinity is not [not ∞] ∀[not ∞].

Proof: Suppose infinity is [not ∞] ∴ infinity belongs to [not ∞] ∴infinity is bounded, by Huo Jian Hua's Definition of Boundedness. But, infinity is not bounded; (infinity is not bounded) and (infinity is bounded) ➔🡐 ∀[not ∞] ∴infinity is not [not ∞] ∀[not ∞]. Q.E.D.

Prove that not (not ∞) does not necessarily simplify to ∞ ∀not (not ∞).

Proof: Suppose (not (not ∞)) does necessarily simplify to ∞, the (not (not ∞)) must be a complement of not ∞, and, (not ∞) must be a complement of ∞ such that U={∞, (not ∞)}. ∴ ∞ in U ∴∞ is an element ∴∞ belongs to an element ∴∞ is bounded, by Huo Jian Hua's Definition of Boundedness. But, ∞ is not bounded; (∞ is not bounded) and (∞ is bounded) ➔🡐 ∀not (not ∞) ∴ not (not ∞) does not necessarily simplify to ∞ ∀not (not ∞). Q.E.D.

Verify that not (not ∞) does not necessarily simplify to ∞ ∀not (not ∞).

Verify 1:

Prove that (not ∞) is not a complement of ∞ ∀(not ∞).

Proof: Suppose (not ∞) is a complement of ∞ ∴ U={∞, (not ∞)}. ∴ ∞ in U ∴∞ is an element ∴∞ belongs to an element ∴∞ is bounded, by Huo Jian Hua's Definition of Boundedness. But, ∞ is not bounded; (∞ is not bounded) and (∞ is bounded) ➔🡐 ∀(not ∞) ∴(not ∞) is not a complement ∞ ∀(not ∞).■

Proof: The x value from (row 5, col 1) of [Table E1] is (not ∞). The Definition of Existence proof has originally defined that (not ∞) being [T], [F], or [∅]. Because (not ∞) is not a complement of ∞, (not ∞) of (row 5, col 1) is not a complement of ∞. Because (not ∞) is not a complement of ∞, so not (not ∞) does not necessarily simplify to ∞ ∀not (not ∞).

Verify 2:

Proof: The x value from (row 5, col 1) of [Table E1] is (not ∞). The Definition of Existence proof has originally defined that (not ∞) being [T], [F], or [∅]. [Table E1] shows that not (not ∞) is at (row 6, col 1) which is ∞. However, (row 5, col 3) says that this value of x at (row 6, col 1) is not ∞, so the (not (not ∞)) simplifies to (not ∞) ∀not (not ∞). ∴(not (not ∞)) does not necessarily simplify to ∞ ∀not (not ∞). (Note that from the "Off the Paper" section, the ∞ from the "infinity is unbounded" axiom is not infinity at all, so therefore the (not (not ∞)) does not simplify to infinity.)

The (Verify 1) assumes that (not ∞) is not a complement of ∞, and the (Verify 2) uses (not ∞) as a complement of ∞ by [Table E1]. Whether (not ∞) is a complement of ∞ or not, both verifications reach that not (not ∞) does not necessarily simplify to ∞ ∀not (not ∞) conclusion. Q.E.D.

Prove that [not (not ∞)] is not infinity ∀[not (not ∞)].

Proof: Suppose [not (not ∞)] is infinity ∴infinity is a container. But, infinity is not a container; (infinity is not a container) and (infinity is a container) ➔🡐∀[not (not ∞)] ∴[not (not ∞)] is not infinity ∀[not (not ∞)]. Q.E.D.

Prove ∃[not (not ∞)] ∀[not (not ∞)].

Proof: [not (not ∞)] is not infinity ∴∃[not (not ∞)] ∀[not (not ∞)]. Q.E.D.

This paper has first proved “infinity is not x ∀x” by using Huo Jian Hua’s Definition of Boundedness. Then, we have proved that infinity is not x for each x from column 1 in [Table E1] to verify “infinity is not x ∀x”. Note that the x of the “infinity is not x” cannot be unbounded because the “infinity is unbounded” axiom does not hold, so this section has left out the unbounded. Since all the rest of rights benefits belong to Huo Jian Hua, therefore, all rights-benefits of the unbounded belong to Huo Jian Hua by His contract guaranteed to Him. As always, all rights-benefits belong to Huo Jian Hua, and all the rest of rights-benefits belong to Huo Jian Hua by His contract guaranteed to Him for using of Huo Jian Hua’s Definition of Boundedness.

證明及查對無限及非 X

在此篇中使用到霍建華〈有界的定義〉以證明無限非 x∀x。然後，我們使用〈「存在」的定義〉內全部的 X 數值以查對「無限即非 x∀x」的證明，x≠無界。值得注意的是「無限即非 x」內的 x 不可以為「無界」，由於「無限即無界」公理無法支承這狀況。所以，此篇就把「無界」給剩下了。既然全部剩下的權力益全都歸霍建華根據霍建華〈有界的定義〉使用契約保證，全部無界的權力益全都保證歸霍建華。

證明無限即非 x∀x。

證：　從〈證明無限不是無限〉篇中得知[x 即 y]⇒[x 屬於 y]∀x、y。

假設無限即 x ∴無限屬於 x ∴無限即有界，根據霍建華〈有界的定義〉。但，無限即非有界，（無限即非有界）又（無限即有界）➔🡐 ∀x ∴無限即非 x ∀x。證明完畢。

查對無限即非 x ∀x。

將〈「存在」的定義〉內的[覽 E1]陳列於以下：

行＼排	1	2	3	4
1	x	∃x	x 即非無限	[∃x]⇔[x 即非無限]
2	是	是	是	是
3	否	是	是	是
4	∅	是	是	是
5	非無限	是	是	是
6	無限	是	是	是

[覽 E1]

第一排已列出所有 x 的值，所以我們將查對 x 排之下每一行的 x 值。

查對無限即非[是] ∀[是]。

證：　假設無限即[是] ∴無限屬於[是] ∴無限即有界，根據霍建華〈有界的定義〉。但，無限即非有界，(無限即非有界）又（無限即有界）➔🡐 ∀[是] ∴無限即非 [是] ∀[是]。證明完畢。

查對無限即非[否] ∀[否]。

證：　假設無限即[否] ∴無限屬於[否] ∴無限即有界，根據霍建華〈有界的定義〉。但，無限即非有界，(無限即非有界）又（無限即有界）➔🡐 ∀[否] ∴無限即非 [否] ∀[否]。證明完畢。

查對無限即非[∅] ∀[∅]。

證：　假設無限即[∅] ∴無限屬於[∅] ∴無限即有界，根據霍建華〈有界的定義〉。但，無限即非有界，(無限即非有界）又（無限即有界）➔🡐 ∀[∅] ∴無限即非 [∅] ∀[∅]。證明完畢。

查對無限即非[∞]∀[∞]。

證： 假設無限即[∞] ∴無限屬於[∞] ∴無限即有界，根據霍建華〈有界的定義〉。但，無限即非有界，(無限即非有界) 又 (無限即有界) ➔🡐∀[∞].∴無限即非[∞]∀[∞]。證明完畢。

查對無限即非[非無限] ∀[非無限]。

證： 假設無限即[非無限] ∴無限屬於[非無限] ∴無限即有界，根據霍建華〈有界的定義〉。但，無限即非有界，(無限即非有界) 又 (無限即有界) ➔🡐 ∀[非無限] ∴無限即非 [非無限] ∀[非無限]。證明完畢。

證明非(非∞)不一定簡化至∞∀非(非∞)。

證： 假設(非(非∞))一定簡化至∞，(非(非∞))必然是(非∞)的補集，而且(非∞)必然是∞的補集而U={∞, (非∞)}。∴ ∞在U內 ∴∞即一元素 ∴∞屬於一元素∴∞即有界，根據霍建華〈有界的定義〉。但，∞即非有界，(∞即非有界)又(∞即有界)➔🡐 ∀非(非∞) ∴非(非∞)不一定簡化至∞∀非(非∞)。證明完畢。

查對非(非∞)不一定簡化至∞∀非(非∞)。

查對 1：

證明(非∞)即非∞的補∀(非∞)。

證： 假設(非∞)為∞的補∴ U={∞, (非∞)} ∴ ∞在U內 ∴∞即一元素 ∴∞屬於一元素 ∴∞即有界，根據霍建華〈有界的定義〉。但，∞即非有界，(∞即非有界)又(∞即有界)➔🡐∀(非∞) ∴(非∞)即非∞的補∀(非∞)。■

證： 在[覽 E1](行 5, 排 1)內的 x 值為(非∞)。〈「存在」的定義〉的證明已將(非∞)定義為[是]、[否]或[∅]。由於非∞即非∞的補，(行 5, 排 1) 的(非∞)不可為∞的補。由於(非∞)不是∞的補，所以非(非∞)並不一定簡化至∞∀非(非∞)。

查對 2：

證： 在[覽 E1](行 5, 排 1)內的 x 值為(非∞)。〈「存在」的定義〉的證明已將(非∞)定義為[是]、[否]或[∅]。[覽 E1]展現出非(非∞)是在(行 6, 排 1)其為∞。然而，(行 5, 排 3)說明此在(行 6, 排 1)的此 x 值為(非∞)，所以此(非(非∞))簡化至(非∞) ∀非(非∞) ∴(非(非∞))並不一定簡化至∞∀非(非∞)。(註：在〈文外〉篇裡來自「無限即無界」公理內的∞完全不是無限， 所以(非(非∞))不會簡化至無限。)

查對 1 認定(非∞)不是∞的補，然而查對 2 根據[覽 E1]使用(非∞)就如同∞的一個補。無論(非∞)是否是∞的補，此兩項的查對都到達「非(非∞)不一定簡化至∞∀非(非∞)」的結論。證明完畢。

證明[非(非∞)]即非無限∀[非(非∞)]。

證： 假設[非(非∞)]即無限 ∴無限即一容器。但，無限即非一容器，(無限即非一容器) 又 (無限即一容器) ➔🡐[非(非∞)] ∴[非(非∞)]即非無限∀[非(非∞)]。證明完畢。

證明∃[非(非∞)] ∀[非(非∞)]。

證： [非(非∞)]即非無限 ∴∃[非(非∞)] ∀[非(非∞)]。證明完畢。

此篇使用了霍建華〈有界的定義〉一開始證明了「無限即非 x∀x」。之後，我們針對每一個在[覽 E1]內第一排的 x 值證明了無限即非 x 以查對「無限即非 x ∀x」。值得注意的是在「無限即非 x」的 x 不可為「無界」，由於「無限即無界」會不支承，所以此篇就把「無界」成了「剩下的」不在此篇中。既然一切剩下的權力益都歸霍建華，所以，根據對保證霍建華〈有界的定義〉使用契約保證，所以一切「無界」權力益全都歸霍建華。一切權力益全都歸霍建華及任何剩下的權力益全都歸霍建華，根據從一開始使用霍建華〈有界的定義〉，對霍建華的〈有界的定義〉使用的契約保證。