

t46\_dickson  
(TMWBc7injjVYR6RT5LKyoYPST9uwhsDQGyu)

October 27, 2020

Let  $r8\_relat\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k10\_dickson : \iota$  be given. Let  $k5\_numbers : \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_domain\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v6\_membered : \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0. \forall X1. \neg (X0 \in X1) \wedge (v1\_xboole\_0 X1) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. (v1\_xxreal\_0 X0) \Rightarrow (\forall X1. (v1\_xxreal\_0 X1) \Rightarrow (\forall X2. \\ & (v1\_xxreal\_0 X2) \Rightarrow (((r1\_xxreal\_0 X0 X1) \wedge (r1\_xxreal\_0 X1 X2)) \Rightarrow \\ & (r1\_xxreal\_0 X0 X2)))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. (k4\_tarski X0 X1 = \\ & k4\_tarski X2 X3) \Rightarrow ((X0 = X2) \wedge (X1 = X3)) \end{aligned} \quad (3)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1\_xboole\_0 X0) \wedge \\ & ((\neg v1\_xboole\_0 X1) \wedge ((m1\_subset\_1 X2 X0) \wedge (m1\_subset\_1 X3 X1)))) \Rightarrow \\ & (k1\_domain\_1 X0 X1 X2 X3 = k4\_tarski X2 X3) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. v1\_relat\_1 (k2\_zfmisc\_1 X0 X1) \quad (6)$$

Assume the following.

$$v6\_membered\ k4\_ordinal1 \quad (7)$$

Assume the following.

$$m1\_subset\_1\ k10\_dickson\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ k5\_numbers)) \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1\_relat\_1\ X0) \Rightarrow (\forall X1.(r8\_relat\_2\ X0\ X1) \Leftrightarrow (\forall X2. \\ \forall X3.\forall X4.((X2 \in X1) \wedge ((X3 \in X1) \wedge ((X4 \in X1) \wedge ((k4\_tarski \\ X2\ X3 \in X0) \wedge (k4\_tarski\ X3\ X4 \in X0)))))) \Rightarrow (k4\_tarski\ X2\ X4 \in X0))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} k10\_dickson = ReplSep2\ (toset\ (\lambda X0 : \iota.m1\_subset\_1\ X0\ k5\_numbers)) \\ (\lambda X0 : \iota.toset\ (\lambda X1 : \iota.m1\_subset\_1\ X1\ k5\_numbers))\ ( \\ \lambda X0 : \iota.\lambda X1 : \iota.r1\_xxreal\_0\ X0\ X1)\ (\lambda X0 : \iota.\lambda X1 : \\ \iota.k1\_domain\_1\ k5\_numbers\ k5\_numbers\ X0\ X1) \end{aligned} \quad (10)$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0) \Rightarrow (v1\_xxreal\_0\ X0) \quad (11)$$

Assume the following.

$$\forall X0.(v1\_relat\_1\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0)) \Rightarrow (v1\_relat\_1\ X1)) \quad (12)$$

Assume the following.

$$\forall X0.(v6\_membered\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ X0) \Rightarrow (v7\_ordinal1\ X1)) \quad (13)$$

**Theorem 1**  $r8\_relat\_2\ k10\_dickson\ k5\_numbers$ .