

t17_card_2

(TMPx8VfJpM2JGLhwMr6WC4pSGyNfsEHZ1Ey)

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Let $k1_card_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_card_1 : \iota \Rightarrow \iota$ be given. Let $k2_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Let $r2_wellord2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_card_1 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\
 & \quad \forall X6. \forall X7. ((r2_wellord2 X0 X1) \wedge (r2_wellord2 X2 X3)) \Rightarrow \\
 & \quad ((X4 = X5) \vee ((X6 = X7) \vee ((r2_wellord2 (k2_xboole_0 (k2_zfmisc_1 \\
 & \quad X0 (k1_tarski X4)) (k2_zfmisc_1 X2 (k1_tarski X5))) (k2_xboole_0 \\
 & \quad (k2_zfmisc_1 X1 (k1_tarski X6)) (k2_zfmisc_1 X3 (k1_tarski X7)))))) \wedge \\
 & \quad (k1_card_1 (k2_xboole_0 (k2_zfmisc_1 X0 (k1_tarski X4)) (k2_zfmisc_1 \\
 & \quad X2 (k1_tarski X5))) = k1_card_1 (k2_xboole_0 (k2_zfmisc_1 X1 (k1_tarski \\
 & \quad X6)) (k2_zfmisc_1 X3 (k1_tarski X7))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0. (v1_card_1 X0) \Rightarrow (\forall X1. (v1_card_1 X1) \Rightarrow (\forall X2. \\
 & \quad \forall X3. (X2 \neq X3) \Rightarrow ((r2_wellord2 (k1_card_2 X0 X1) (k2_xboole_0 \\
 & \quad (k2_zfmisc_1 X0 (k1_tarski X2)) (k2_zfmisc_1 X1 (k1_tarski X3)))))) \wedge \\
 & \quad (k1_card_2 X0 X1 = k1_card_1 (k2_xboole_0 (k2_zfmisc_1 X0 (k1_tarski \\
 & \quad X2)) (k2_zfmisc_1 X1 (k1_tarski X3))))))
 \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0. \forall X1. (r2_wellord2 X0 X1) \Rightarrow (r2_wellord2 X1 X0) \tag{3}$$

Assume the following.

$$\forall X0. v1_card_1 (k1_card_1 X0) \tag{4}$$

Assume the following.

$$\forall X0. \forall X1. (v1_card_1 X1) \Rightarrow ((X1 = k1_card_1 X0) \Leftrightarrow (r2_wellord2 X0 X1)) \tag{5}$$

Theorem 1

$$\forall X0.\forall X1.\forall X2.\forall X3.(X0\neq X1)\Rightarrow(k1_card_2$$
$$(k1_card_1 X2) (k1_card_1 X3) = k1_card_1 (k2_xboole_0 (k2_zfmisc_1$$
$$X2 (k1_tarski X0)) (k2_zfmisc_1 X3 (k1_tarski X1))))$$