

t68_valued_2

(TMHn3dMH6TmUgk5jsNJgEE99rRc4nW4DmwW)

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Let $v1_valued_2 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_valued_0 : \iota \Rightarrow o$ be given. Let $k63_valued_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k30_valued_1 : \iota \Rightarrow \iota$ be given. Let $k2_valued_2 : \iota \Rightarrow \iota$ be given. Let $k1_valued_2 : \iota \Rightarrow \iota$ be given. Let $k16_valued_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_xcmplx_0 : \iota \Rightarrow \iota$ be given. Let $v1_xcmplx_0 : \iota \Rightarrow o$ be given. Let $k24_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k62_valued_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k15_valued_2 : \iota \Rightarrow \iota$ be given. Let $v7_valued_2 : \iota \Rightarrow o$ be given. Let $k3_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_valued_0 X0))) \Rightarrow \\ & \quad ((k9_xtuple_0 (k30_valued_1 X0) = k9_xtuple_0 X0) \wedge (\forall X1. \\ & \quad k1_funct_1 (k30_valued_1 X0) X1 = k4_xcmplx_0 (k1_funct_1 X0 X1))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_xcmplx_0 X0) \Rightarrow (\forall X1.((v1_relat_1 X1) \wedge ((\\ & \quad v1_funct_1 X1) \wedge (v1_valued_0 X1)))) \Rightarrow (k24_valued_1 (k30_valued_1 \\ & \quad X1) X0 = k24_valued_1 X1 (k4_xcmplx_0 X0)) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((v1_valued_2 X1) \wedge \\ & \quad (((v1_funct_1 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ & \quad X0 X1)))) \wedge ((v1_relat_1 X3) \wedge ((v1_funct_1 X3) \wedge (v1_valued_0 X3)))))) \Rightarrow \\ & \quad (k63_valued_2 X0 X1 X2 X3 = k62_valued_2 X1 X2 X3) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((v1_valued_2 X1) \wedge ((v1_funct_1 \\ & \quad X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))) \Rightarrow (k16_valued_2 \\ & \quad X0 X1 X2 = k15_valued_2 X2) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_valued_0 X0))) \Rightarrow (k30_valued_1 (k30_valued_1 X0) = X0) \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_valued_0 X0))) \Rightarrow (v1_xcmplx_0 (k1_funct_1 X0 X1)) \quad (6)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v7_valued_2 X0))) \Rightarrow (v1_valued_0 (k1_funct_1 X0 X1)) \quad (7)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v7_valued_2 X0))) \Rightarrow ((v1_relat_1 (k1_funct_1 X0 X1)) \wedge (v1_funct_1 (k1_funct_1 X0 X1))) \quad (8)$$

Assume the following.

$$\forall X0. v1_valued_2 (k2_valued_2 X0) \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((v1_valued_2 X1) \wedge \\ & (((v1_funct_1 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 X1)))) \wedge ((v1_relat_1 X3) \wedge ((v1_funct_1 X3) \wedge (v1_valued_0 X3)))))) \Rightarrow \\ & ((v1_funct_1 (k63_valued_2 X0 X1 X2 X3)) \wedge (m1_subset_1 (k63_valued_2 \\ & X0 X1 X2 X3) (k1_zfmisc_1 (k2_zfmisc_1 (k3_xboole_0 X0 (k9_xtuple_0 \\ & X3)) (k2_valued_2 (k1_valued_2 X1)))))) \end{aligned} \quad (10)$$

Assume the following.

$$\forall X0. ((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_valued_0 X0))) \Rightarrow ((v1_relat_1 (k30_valued_1 X0)) \wedge ((v1_funct_1 (k30_valued_1 X0)) \wedge (v1_valued_0 (k30_valued_1 X0)))) \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((v1_valued_2 X1) \wedge ((v1_funct_1 \\ & X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))) \Rightarrow ((v1_funct_1 \\ & (k16_valued_2 X0 X1 X2)) \wedge (m1_subset_1 (k16_valued_2 X0 X1 X2) (\\ & k1_zfmisc_1 (k2_zfmisc_1 X0 (k2_valued_2 (k1_valued_2 X1)))))) \end{aligned} \quad (12)$$

Assume the following.

$$\forall X0. ((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v7_valued_2 X0))) \Rightarrow ((v1_relat_1 (k15_valued_2 X0)) \wedge (v1_funct_1 (k15_valued_2 X0))) \quad (13)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. (X2 = k3_xboole_0 X0 X1) \Leftrightarrow (\forall X3. \\ (X3 \in X2) \Leftrightarrow ((X3 \in X0) \wedge (X3 \in X1))) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} \forall X0. (v1_valued_2 X0) \Rightarrow (\forall X1. ((v1_relat_1 X1) \wedge ((\\ v5_relat_1 X1 X0) \wedge (v1_funct_1 X1))) \Rightarrow (\forall X2. ((v1_relat_1 \\ X2) \wedge ((v1_funct_1 X2) \wedge (v1_valued_0 X2))) \Rightarrow (\forall X3. ((v1_relat_1 \\ X3) \wedge (v1_funct_1 X3)) \Rightarrow ((X3 = k62_valued_2 X0 X1 X2) \Leftrightarrow ((k9_xtuple_0 \\ X3 = k3_xboole_0 (k9_xtuple_0 X1) (k9_xtuple_0 X2)) \wedge (\forall X4. \\ (X4 \in k9_xtuple_0 X3) \Rightarrow (k1_funct_1 X3 X4 = k24_valued_1 (k1_funct_1 \\ X1 X4) (k1_funct_1 X2 X4)))))))))) \end{aligned} \quad (15)$$

Assume the following.

$$\begin{aligned} \forall X0. ((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v7_valued_2 X0))) \Rightarrow \\ (\forall X1. ((v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow ((X1 = k15_valued_2 \\ X0) \Leftrightarrow ((k9_xtuple_0 X1 = k9_xtuple_0 X0) \wedge (\forall X2. (X2 \in k9_xtuple_0 \\ X1) \Rightarrow (k1_funct_1 X1 X2 = k30_valued_1 (k1_funct_1 X0 X2)))))) \end{aligned} \quad (16)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. (m1_subset_1 X2 (k1_zfmisc_1 \\ (k2_zfmisc_1 X0 X1))) \Rightarrow ((v4_relat_1 X2 X0) \wedge (v5_relat_1 X2 X1)) \end{aligned} \quad (17)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. (v1_valued_2 X1) \Rightarrow (\forall X2. (m1_subset_1 \\ X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow ((v1_funct_1 X2) \Rightarrow ((v1_funct_1 \\ X2) \wedge (v7_valued_2 X2)))) \end{aligned} \quad (18)$$

Assume the following.

$$\begin{aligned} \forall X0. (v1_valued_2 X0) \Rightarrow (\forall X1. ((v1_relat_1 X1) \wedge ((\\ v5_relat_1 X1 X0) \wedge (v1_funct_1 X1))) \Rightarrow ((v1_relat_1 X1) \wedge ((v5_relat_1 \\ X1 X0) \wedge ((v1_funct_1 X1) \wedge (v7_valued_2 X1)))) \end{aligned} \quad (19)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. (m1_subset_1 X2 (k1_zfmisc_1 \\ (k2_zfmisc_1 X0 X1))) \Rightarrow (v1_relat_1 X2) \end{aligned} \quad (20)$$

Theorem 1

$$\begin{aligned} \forall X0. \forall X1. (v1_valued_2 X1) \Rightarrow (\forall X2. ((v1_funct_1 \\ X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))) \Rightarrow (\forall X3. \\ ((v1_relat_1 X3) \wedge ((v1_funct_1 X3) \wedge (v1_valued_0 X3))) \Rightarrow (k63_valued_2 \\ X0 X1 X2 (k30_valued_1 X3) = k63_valued_2 X0 (k2_valued_2 (k1_valued_2 \\ X1)) (k16_valued_2 X0 X1 X2) X3))) \end{aligned}$$