

t78_funct_3

(TMM335uVCZcjSmitGDU3zD37A53NUcDHZbC)

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Let $v1_funct.1 : \iota \Rightarrow o$ be given. Let $v1_funct.2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ 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 $k13_funct.3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_relat.1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k12_funct.3 : \iota \Rightarrow \iota$ be given. Let $k16_funct.3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xboole.0 : \iota$ be given. Let $v1_xboole.0 : \iota \Rightarrow o$ be given. Let $v1_relat.1 : \iota \Rightarrow o$ be given. Let $k9_xtuple.0 : \iota \Rightarrow \iota$ be given. Let $k15_funct.3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v4_relat.1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_relset.1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k11_funct.3 : \iota \Rightarrow \iota$ be given. Let $v5_relat.1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0. \forall X1. (k2_zfmisc.1 X0 X1 = k1_xboole.0) \Leftrightarrow ((X0 = k1_xboole.0) \vee (X1 = k1_xboole.0)) \quad (1)$$

Assume the following.

$$\forall X0. (v1_xboole.0 X0) \Rightarrow (X0 = k1_xboole.0) \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1_relat.1 X1) \wedge (v1_funct.1 X1)) \Rightarrow (\forall X2. \\ & ((v1_relat.1 X2) \wedge (v1_funct.1 X2)) \Rightarrow (((k9_xtuple.0 X1 = X0) \wedge (k9_xtuple.0 \\ & X2 = X0)) \Rightarrow (k13_funct.3 X1 X2 = k3_relat.1 (k12_funct.3 X0) (k15_funct.3 \\ & X1 X2)))) \quad (3) \end{aligned}$$

Assume the following.

$$\forall X0. \forall X1. ((v1_relat.1 X1) \wedge (v4_relat.1 X1 X0)) \Rightarrow (k1_relset.1 X0 X1 = k9_xtuple.0 X1) \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\ & (((v1_funct.1 X4) \wedge ((v1_funct.2 X4 X0 X2) \wedge (m1_subset.1 X4 (k1_zfmisc.1 \\ & (k2_zfmisc.1 X0 X2)))))) \wedge ((v1_funct.1 X5) \wedge ((v1_funct.2 X5 X1 X3) \wedge \\ & (m1_subset.1 X5 (k1_zfmisc.1 (k2_zfmisc.1 X1 X3)))))) \Rightarrow (k16_funct.3 \\ & X0 X1 X2 X3 X4 X5 = k15_funct.3 X4 X5) \quad (5) \end{aligned}$$

Assume the following.

$$\forall X0.k12_funct_3 X0 = k11_funct_3 X0 \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.\exists X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \wedge ((v1_xboole_0 X2) \wedge ((v1_relat_1 X2) \wedge ((v4_relat_1 X2 X0) \wedge (v5_relat_1 X2 X1)))) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.(((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_xboole_0 X0))) \wedge ((v1_relat_1 X1) \wedge (v1_funct_1 X1))) \Rightarrow ((v1_relat_1 (k13_funct_3 X1 X0)) \wedge ((v1_funct_1 (k13_funct_3 X1 X0)) \wedge (v1_xboole_0 (k13_funct_3 X1 X0)))) \quad (8)$$

Assume the following.

$$v1_xboole_0 k1_xboole_0 \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.(((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_xboole_0 X0))) \wedge ((v1_relat_1 X1) \wedge (v1_funct_1 X1))) \Rightarrow ((v1_relat_1 (k13_funct_3 X0 X1)) \wedge ((v1_funct_1 (k13_funct_3 X0 X1)) \wedge (v1_xboole_0 (k13_funct_3 X0 X1)))) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xboole_0 X0) \wedge (v1_relat_1 X1)) \Rightarrow ((v1_xboole_0 (k3_relat_1 X1 X0)) \wedge (v1_relat_1 (k3_relat_1 X1 X0))) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5.(((v1_funct_1 X4) \wedge ((v1_funct_2 X4 X0 X2) \wedge (m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 X0 X2)))))) \wedge ((v1_funct_1 X5) \wedge ((v1_funct_2 X5 X1 X3) \wedge (m1_subset_1 X5 (k1_zfmisc_1 (k2_zfmisc_1 X1 X3)))))) \Rightarrow ((v1_funct_1 (k16_funct_3 X0 X1 X2 X3 X4 X5)) \wedge ((v1_funct_2 (k16_funct_3 X0 X1 X2 X3 X4 X5) (k2_zfmisc_1 X0 X1) (k2_zfmisc_1 X2 X3)) \wedge (m1_subset_1 (k16_funct_3 X0 X1 X2 X3 X4 X5) (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 X0 X1) (k2_zfmisc_1 X2 X3)))))) \quad (12)$$

Assume the following.

$$\forall X0.(v1_relat_1 (k11_funct_3 X0)) \wedge (v1_funct_1 (k11_funct_3 X0)) \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1))) \Rightarrow (((X1 \neq k1_xboole_0) \Rightarrow ((v1_funct_2 X2 X0 \\ & X1) \Leftrightarrow (X0 = k1_relset_1 X0 X2))) \wedge ((X1 = k1_xboole_0) \Rightarrow ((v1_funct_2 \\ & X2 X0 X1) \Leftrightarrow (X2 = k1_xboole_0)))) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1))) \Rightarrow ((v4_relat_1 X2 X0) \wedge (v5_relat_1 X2 X1)) \end{aligned} \quad (15)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 \\ & X0)) \Rightarrow (v1_xboole_0 X1)) \end{aligned} \quad (16)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1))) \Rightarrow (v1_relat_1 X2) \end{aligned} \quad (17)$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (v1_relat_1 X0) \quad (18)$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (v1_funct_1 X0) \quad (19)$$

Theorem 1

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((v1_funct_1 X3) \wedge \\ & ((v1_funct_2 X3 X0 X1) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 X1)))) \Rightarrow (\forall X4.((v1_funct_1 X4) \wedge ((v1_funct_2 X4 X0 X2) \wedge \\ & (m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 X0 X2)))) \Rightarrow (k13_funct_3 \\ & X3 X4 = k3_relat_1 (k12_funct_3 X0) (k16_funct_3 X0 X0 X1 X2 X3 X4))) \end{aligned}$$