

t47_cfunct_1 (TM-
JANAa181B43CCMDQE6NZ1KwQ4Q7r74pAN)

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Let $v1_xboole_0 : \iota \Rightarrow o$ 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 $k2_numbers : \iota$ be given. Let $r2_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_cfunct_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k46_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k19_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_cfunct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_membered : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge (\\ & m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 k2_numbers)))) \Rightarrow (\\ & \forall X2.((v1_funct_1 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 k2_numbers)))) \Rightarrow (r2_relset_1 X0 k2_numbers (k1_cfunct_1 X0 \\ & X1 X2) (k19_valued_1 X0 k2_numbers k2_numbers X1 (k2_cfunct_1 X0 \\ & X2)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge (\\ & m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 k2_numbers)))) \Rightarrow (\\ & \forall X2.((v1_funct_1 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 k2_numbers)))) \Rightarrow (\forall X3.((v1_funct_1 X3) \wedge (m1_subset_1 \\ & X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 k2_numbers)))) \Rightarrow (r2_relset_1 \\ & X0 k2_numbers (k19_valued_1 X0 k2_numbers k2_numbers (k46_valued_1 \\ & X0 k2_numbers k2_numbers X1 X2) X3) (k46_valued_1 X0 k2_numbers \\ & k2_numbers (k19_valued_1 X0 k2_numbers k2_numbers X1 X3) (k19_valued_1 \\ & X0 k2_numbers k2_numbers X2 X3)))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge (\\ m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 k2_numbers)))) \Rightarrow (\\ \forall X2.((v1_funct_1 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ X0 k2_numbers)))) \Rightarrow (\forall X3.((v1_funct_1 X3) \wedge (m1_subset_1 \\ X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 k2_numbers)))) \Rightarrow (r2_relset_1 \\ X0 k2_numbers (k19_valued_1 X0 k2_numbers k2_numbers (k2_valued_1 \\ X0 k2_numbers k2_numbers X1 X2) X3) (k2_valued_1 X0 k2_numbers k2_numbers \\ (k19_valued_1 X0 k2_numbers k2_numbers X1 X3) (k19_valued_1 X0 \\ k2_numbers k2_numbers X2 X3)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.\forall X3.((m1_subset_1 X2 \\ (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\ (k2_zfmisc_1 X0 X1)))) \Rightarrow ((r2_relset_1 X0 X1 X2 X3) \Leftrightarrow (X2 = X3)) \end{aligned} \quad (4)$$

Assume the following.

$$v1_membered k2_numbers \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((v1_membered \\ X1) \wedge ((v1_membered X2) \wedge (((v1_funct_1 X3) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\ (k2_zfmisc_1 X0 X1)))) \wedge ((v1_funct_1 X4) \wedge (m1_subset_1 X4 (k1_zfmisc_1 \\ (k2_zfmisc_1 X0 X2)))))) \Rightarrow ((v1_funct_1 (k46_valued_1 X0 X1 X2 X3 \\ X4)) \wedge (m1_subset_1 (k46_valued_1 X0 X1 X2 X3 X4) (k1_zfmisc_1 \\ (k2_zfmisc_1 X0 k2_numbers)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((v1_membered \\ X1) \wedge ((v1_membered X2) \wedge (((v1_funct_1 X3) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\ (k2_zfmisc_1 X0 X1)))) \wedge ((v1_funct_1 X4) \wedge (m1_subset_1 X4 (k1_zfmisc_1 \\ (k2_zfmisc_1 X0 X2)))))) \Rightarrow ((v1_funct_1 (k2_valued_1 X0 X1 X2 X3 \\ X4)) \wedge (m1_subset_1 (k2_valued_1 X0 X1 X2 X3 X4) (k1_zfmisc_1 (k2_zfmisc_1 \\ X0 k2_numbers)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((\neg v1_xboole_0 X0) \wedge ((v1_funct_1 X1) \wedge (\\ m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 k2_numbers)))) \Rightarrow (\\ (v1_funct_1 (k2_cfunct_1 X0 X1)) \wedge (m1_subset_1 (k2_cfunct_1 \\ X0 X1) (k1_zfmisc_1 (k2_zfmisc_1 X0 k2_numbers)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((\neg v1_xboole_0 X0) \wedge (((v1_funct_1 \\ & X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 k2_numbers)))) \wedge \\ & ((v1_funct_1 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 \\ & k2_numbers)))))) \Rightarrow ((v1_funct_1 (k1_cfunct_1 X0 X1 X2)) \wedge (m1_subset_1 \\ & (k1_cfunct_1 X0 X1 X2) (k1_zfmisc_1 (k2_zfmisc_1 X0 k2_numbers)))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. ((v1_membered \\ & X1) \wedge ((v1_membered X2) \wedge (((v1_funct_1 X3) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1)))) \wedge ((v1_funct_1 X4) \wedge (m1_subset_1 X4 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X2)))))) \Rightarrow ((v1_funct_1 (k19_valued_1 X0 X1 X2 \\ & X3 X4)) \wedge (m1_subset_1 (k19_valued_1 X0 X1 X2 X3 X4) (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 k2_numbers)))) \end{aligned} \quad (10)$$

Theorem 1

$$\begin{aligned} & \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((v1_funct_1 X1) \wedge (\\ & m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 k2_numbers)))) \Rightarrow (\\ & \forall X2. ((v1_funct_1 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 k2_numbers)))) \Rightarrow (\forall X3. ((v1_funct_1 X3) \wedge (m1_subset_1 \\ & X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 k2_numbers)))) \Rightarrow ((r2_relset_1 \\ & X0 k2_numbers (k2_valued_1 X0 k2_numbers k2_numbers (k1_cfunct_1 \\ & X0 X1 X2) (k1_cfunct_1 X0 X3 X2)) (k1_cfunct_1 X0 (k2_valued_1 X0 \\ & k2_numbers k2_numbers X1 X3) X2)) \wedge (r2_relset_1 X0 k2_numbers (\\ & k46_valued_1 X0 k2_numbers k2_numbers (k1_cfunct_1 X0 X1 X2) (k1_cfunct_1 \\ & X0 X3 X2)) (k1_cfunct_1 X0 (k46_valued_1 X0 k2_numbers k2_numbers \\ & X1 X3) X2)))))) \end{aligned}$$