

t13_mesfun6c

(TMdC94K9xbD7UVeTL7CwSu82oE7rxSvU9AJ)

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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 $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k5_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_complex1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} \forall X0. \forall X1. (v1_relat_1 X1) \Rightarrow (k9_xtuple_0 (k5_relat_1 \\ X1 X0) = k3_xboole_0 (k9_xtuple_0 X1) X0) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. (\neg v1_xboole_0 X1) \Rightarrow (\forall X2. ((v1_funct_1 \\ X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X1 k2_numbers)))) \Rightarrow \\ (\forall X3. ((v1_funct_1 X3) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 \\ X1 k2_numbers)))) \Rightarrow ((r2_relset_1 X1 k2_numbers (k2_partfun1 X1 \\ k2_numbers (k2_valued_1 X1 k2_numbers k2_numbers X2 X3) X0) (k2_valued_1 \\ X1 k2_numbers k2_numbers (k2_partfun1 X1 k2_numbers X2 X0) (k2_partfun1 \\ X1 k2_numbers X3 X0))) \wedge ((r2_relset_1 X1 k2_numbers (k2_partfun1 \\ X1 k2_numbers (k2_valued_1 X1 k2_numbers k2_numbers X2 X3) X0) (\\ k2_valued_1 X1 k2_numbers k2_numbers (k2_partfun1 X1 k2_numbers \\ X2 X0) X3)) \wedge (r2_relset_1 X1 k2_numbers (k2_partfun1 X1 k2_numbers \\ (k2_valued_1 X1 k2_numbers k2_numbers X2 X3) X0) (k2_valued_1 X1 \\ k2_numbers k2_numbers X2 (k2_partfun1 X1 k2_numbers X3 X0)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. (r1_tarski X0 X1) \Rightarrow (k3_xboole_0 X0 X1 = X0) \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge (\\ m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 k2_numbers)))) \Rightarrow (\\ \forall X2.((v1_funct_1 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ X0 k2_numbers)))) \Rightarrow ((k1_relset_1 X0 (k2_valued_1 X0 k2_numbers \\ k2_numbers X1 X2) = k9_subset_1 X0 (k1_relset_1 X0 X1) (k1_relset_1 \\ X0 X2)) \wedge (\forall X3.(m1_subset_1 X3 X0) \Rightarrow ((X3 \in k1_relset_1 X0 (\\ k2_valued_1 X0 k2_numbers k2_numbers X1 X2) \Rightarrow (k7_partfun1 k2_numbers \\ (k2_valued_1 X0 k2_numbers k2_numbers X1 X2) X3 = k8_complex1 (k7_partfun1 \\ k2_numbers X1 X3) (k7_partfun1 k2_numbers X2 X3))))))))) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 X0) \Rightarrow (k9_subset_1 X0 X1 X2 = k3_xboole_0 X1 X2)) \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.\forall X3.((v1_funct_1 X2) \wedge (\\ m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))) \Rightarrow (k2_partfun1 \\ X0 X1 X2 X3 = k5_relat_1 X2 X3) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X1) \wedge (v4_relat_1 X1 X0)) \Rightarrow (k1_relset_1 X0 X1 = k9_xtuple_0 X1) \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.\forall X3.((v1_funct_1 X2) \wedge (\\ m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))) \Rightarrow ((v1_funct_1 \\ (k2_partfun1 X0 X1 X2 X3)) \wedge (m1_subset_1 (k2_partfun1 X0 X1 X2 X3) \\ (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X1) \wedge (v4_relat_1 X1 X0)) \Rightarrow (m1_subset_1 (k1_relset_1 X0 X1) (k1_zfmisc_1 X0)) \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(X2 = k3_xboole_0 X0 X1) \Leftrightarrow (\forall X3. \\ (X3 \in X2) \Leftrightarrow ((X3 \in X0) \wedge (X3 \in X1))) \end{aligned} \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.k3_xboole_0 X0 X1 = k3_xboole_0 X1 X0 \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\Rightarrow((v4_relat_1 X2 X0)\wedge(v5_relat_1 X2 X1)) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\Rightarrow(v1_relat_1 X2) \quad (13)$$

Theorem 1

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0)\Rightarrow(\forall X1.\forall X2.((v1_funct_1 \\ & X2)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 k2_numbers))))\Rightarrow \\ & (\forall X3.((v1_funct_1 X3)\wedge(m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 k2_numbers))))\Rightarrow((r1_tarski X1 (k1_relset_1 X0 (k2_valued_1 \\ & X0 k2_numbers k2_numbers X2 X3)))\Rightarrow((k1_relset_1 X0 (k2_valued_1 \\ & X0 k2_numbers k2_numbers (k2_partfun1 X0 k2_numbers X2 X1) (k2_partfun1 \\ & X0 k2_numbers X3 X1)) = X1)\wedge(r2_relset_1 X0 k2_numbers (k2_partfun1 \\ & X0 k2_numbers (k2_valued_1 X0 k2_numbers k2_numbers X2 X3) X1) (\\ & k2_valued_1 X0 k2_numbers k2_numbers (k2_partfun1 X0 k2_numbers \\ & X2 X1) (k2_partfun1 X0 k2_numbers X3 X1)))))) \end{aligned}$$