

t18_mesfunc2

(TMaSfjn9wgcCtXkFW4i6Jk6eg7j37hBvRaQ)

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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 $k7_numbers : \iota$ be given. Let $k12_supinf_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_mesfunc2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_supinf_2 : \iota$ be given. Let $k2_mesfunc2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_supinf_2 : \iota \Rightarrow \iota$ be given. Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Let $k4_xxreal_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ 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 $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k1_extreal2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_valued_0 : \iota \Rightarrow o$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_membered : \iota \Rightarrow o$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. ((X0 \in X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 X2))) \Rightarrow (m1_subset_1 X0 X2) \quad (1)$$

Assume the following.

$$\forall X0. (v1_xxreal_0 X0) \Rightarrow (\forall X1. (v1_xxreal_0 X1) \Rightarrow ((k4_xxreal_0 X0 X1 = X0) \vee (k4_xxreal_0 X0 X1 = X1))) \quad (2)$$

Assume the following.

$$k1_supinf_2 = k1_xboole_0 \quad (3)$$

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.

$$\forall X0. \forall X1. ((m1_subset_1 X0 k7_numbers) \wedge (m1_subset_1 X1 k7_numbers)) \Rightarrow (k1_extreal2 X0 X1 = k4_xxreal_0 X0 X1) \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v2_valued_0 X0))) \Rightarrow (k12_supinf_2 X0 X1 = k1_funct_1 X0 X1) \quad (6)$$

Assume the following.

$$v2_membered\ k7_numbers \quad (7)$$

Assume the following.

$$\forall X0.(m1_subset_1\ X0\ k7_numbers) \Rightarrow (m1_subset_1\ (k2_supinf_2\ X0)\ k7_numbers) \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v1_xboole_0\ X0) \wedge ((v1_funct_1\ X1) \wedge (\\ & m1_subset_1\ X1\ (k1_zfmisc_1\ (k2_zfmisc_1\ X0\ k7_numbers)))))) \Rightarrow \\ & ((v1_funct_1\ (k2_mesfunc2\ X0\ X1)) \wedge (m1_subset_1\ (k2_mesfunc2 \\ & X0\ X1)\ (k1_zfmisc_1\ (k2_zfmisc_1\ X0\ k7_numbers)))) \quad (9) \end{aligned}$$

Assume the following.

$$m1_subset_1\ k1_supinf_2\ k7_numbers \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1\ X1) \wedge (v4_relat_1\ X1\ X0)) \Rightarrow (m1_subset_1\ (k1_relset_1\ X0\ X1)\ (k1_zfmisc_1\ X0)) \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v1_xboole_0\ X0) \wedge ((v1_funct_1\ X1) \wedge (\\ & m1_subset_1\ X1\ (k1_zfmisc_1\ (k2_zfmisc_1\ X0\ k7_numbers)))))) \Rightarrow \\ & ((v1_funct_1\ (k1_mesfunc2\ X0\ X1)) \wedge (m1_subset_1\ (k1_mesfunc2 \\ & X0\ X1)\ (k1_zfmisc_1\ (k2_zfmisc_1\ X0\ k7_numbers)))) \quad (12) \end{aligned}$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1\ X0) \wedge ((v1_funct_1\ X0) \wedge (v2_valued_0\ X0))) \Rightarrow (m1_subset_1\ (k12_supinf_2\ X0\ X1)\ k7_numbers) \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0\ X0) \Rightarrow (\forall X1.((v1_funct_1\ X1) \wedge (\\ & m1_subset_1\ X1\ (k1_zfmisc_1\ (k2_zfmisc_1\ X0\ k7_numbers)))) \Rightarrow (\\ & \forall X2.((v1_funct_1\ X2) \wedge (m1_subset_1\ X2\ (k1_zfmisc_1\ (k2_zfmisc_1 \\ & X0\ k7_numbers)))) \Rightarrow ((X2 = k2_mesfunc2\ X0\ X1) \Leftrightarrow ((k1_relset_1\ X0\ X2 = \\ & k1_relset_1\ X0\ X1) \wedge (\forall X3.(m1_subset_1\ X3\ X0) \Rightarrow ((X3 \in k1_relset_1 \\ & X0\ X2) \Rightarrow (k12_supinf_2\ X2\ X3 = k1_extreal2\ (k2_supinf_2\ (k12_supinf_2 \\ & X1\ X3))\ k1_supinf_2)))))) \quad (14) \end{aligned}$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge (\\ m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 k7_numbers)))) \Rightarrow (\\ \forall X2.((v1_funct_1 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ X0 k7_numbers)))) \Rightarrow ((X2 = k1_mesfunc2 X0 X1) \Leftrightarrow ((k1_relset_1 X0 X2 = \\ k1_relset_1 X0 X1) \wedge (\forall X3.(m1_subset_1 X3 X0) \Rightarrow ((X3 \in k1_relset_1 \\ X0 X2) \Rightarrow (k12_supinf_2 X2 X3 = k1_extreal2 (k12_supinf_2 X1 X3) k1_supinf_2)))))) \end{aligned} \quad (15)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1.\forall X2. \\ ((X1 \in k9_xtuple_0 X0) \Rightarrow ((X2 = k1_funct_1 X0 X1) \Leftrightarrow (k4_tarski X1 X2 \in \\ X0))) \wedge ((\neg X1 \in k9_xtuple_0 X0) \Rightarrow ((X2 = k1_funct_1 X0 X1) \Leftrightarrow (X2 = k1_xboole_0)))) \end{aligned} \quad (16)$$

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.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 \\ (k2_zfmisc_1 X0 X1))) \Rightarrow (v1_relat_1 X2) \end{aligned} \quad (18)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(v2_membered X1) \Rightarrow (\forall X2.(m1_subset_1 \\ X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow (v2_valued_0 X2)) \end{aligned} \quad (19)$$

Assume the following.

$$\begin{aligned} \forall X0.(v2_membered X0) \Rightarrow (\forall X1.(m1_subset_1 X1 X0) \Rightarrow \\ (v1_xreal_0 X1)) \end{aligned} \quad (20)$$

Theorem 1

$$\begin{aligned} \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge (\\ m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 k7_numbers)))) \Rightarrow (\\ \forall X2.(m1_subset_1 X2 X0) \Rightarrow (((k12_supinf_2 (k1_mesfunc2 \\ X0 X1) X2 = k12_supinf_2 X1 X2) \vee (k12_supinf_2 (k1_mesfunc2 X0 X1) \\ X2 = k1_supinf_2)) \wedge ((k12_supinf_2 (k2_mesfunc2 X0 X1) X2 = k2_supinf_2 \\ (k12_supinf_2 X1 X2)) \vee (k12_supinf_2 (k2_mesfunc2 X0 X1) X2 = k1_supinf_2)))))) \end{aligned}$$