

t20_mesfunc2
(TMNhrRFRrdcqFDsTvGzs1SmfhMAiX7Ltksf)

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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 $k1_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_numbers : \iota$ be given. Let $k3_extreal1 : \iota \Rightarrow \iota$ 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 $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k1_extreal2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_membered : \iota \Rightarrow o$ be given. Let $v2_valued_0 : \iota \Rightarrow o$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(m1_subset_1 X0 k7_numbers) \Rightarrow ((r1_xxreal_0 X0 k6_numbers) \Rightarrow (k3_extreal1 X0 = k2_supinf_2 X0)) \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((X0 \in X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 X2))) \Rightarrow (m1_subset_1 X0 X2) \quad (2)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k7_numbers) \Rightarrow (r1_xxreal_0 k6_numbers (k3_extreal1 X0)) \quad (3)$$

Assume the following.

$$\forall X0.(v1_xxreal_0 X0) \Rightarrow (\forall X1.(v1_xxreal_0 X1) \Rightarrow (r1_xxreal_0 X0 (k4_xxreal_0 X0 X1))) \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge (\\ m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 k7_numbers)))) \Rightarrow (\\ \forall X2.(m1_subset_1 X2 X0) \Rightarrow (((k12_supinf_2 (k1_mesfunc2 \\ X0 X1) X2 = k12_supinf_2 X1 X2) \vee (k12_supinf_2 (k1_mesfunc2 X0 X1) \\ X2 = k1_supinf_2)) \wedge ((k12_supinf_2 (k2_mesfunc2 X0 X1) X2 = k2_supinf_2 \\ (k12_supinf_2 X1 X2)) \vee (k12_supinf_2 (k2_mesfunc2 X0 X1) X2 = k1_supinf_2)))))) \end{aligned} \quad (5)$$

Assume the following.

$$k6_numbers = k1_xboole_0 \quad (6)$$

Assume the following.

$$k1_supinf_2 = k1_xboole_0 \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X1) \wedge (v4_relat_1 X1 X0)) \Rightarrow (\\ k1_relset_1 X0 X1 = k9_xtuple_0 X1) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1 X0 k7_numbers) \wedge (m1_subset_1 \\ X1 k7_numbers)) \Rightarrow (k1_extreal2 X0 X1 = k4_xxreal_0 X0 X1) \quad (9)$$

Assume the following.

$$v2_membered k7_numbers \quad (10)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k7_numbers) \Rightarrow (m1_subset_1 (k3_extreal1 \\ X0) k7_numbers) \quad (11)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k7_numbers) \Rightarrow (m1_subset_1 (k2_supinf_2 \\ X0) k7_numbers) \quad (12)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((\neg v1_xboole_0 X0) \wedge ((v1_funct_1 X1) \wedge (\\ m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 k7_numbers)))) \Rightarrow (\\ ((v1_funct_1 (k2_mesfunc2 X0 X1)) \wedge (m1_subset_1 (k2_mesfunc2 \\ X0 X1) (k1_zfmisc_1 (k2_zfmisc_1 X0 k7_numbers)))))) \end{aligned} \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X1) \wedge (v4_relat_1 X1 X0)) \Rightarrow (\\ m1_subset_1 (k1_relset_1 X0 X1) (k1_zfmisc_1 X0)) \quad (14)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v1_xboole_0 X0) \wedge ((v1_funct_1 X1) \wedge \\ & m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 k7_numbers)))) \Rightarrow \\ & ((v1_funct_1 (k1_mesfunc2 X0 X1)) \wedge (m1_subset_1 (k1_mesfunc2 \\ & X0 X1) (k1_zfmisc_1 (k2_zfmisc_1 X0 k7_numbers)))) \end{aligned} \quad (15)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v2_valued_0 X0))) \Rightarrow (m1_subset_1 (k12_supinf_2 X0 X1) k7_numbers) \quad (16)$$

Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((v1_funct_1 X1) \wedge \\ & m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 k7_numbers)))) \Rightarrow (\\ & \forall X2. ((v1_funct_1 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 k7_numbers)))) \Rightarrow ((X2 = k2_mesfunc2 X0 X1) \Leftrightarrow ((k1_relset_1 X0 X2 = \\ & k1_relset_1 X0 X1) \wedge (\forall X3. (m1_subset_1 X3 X0) \Rightarrow ((X3 \in k1_relset_1 \\ & X0 X2) \Rightarrow (k12_supinf_2 X2 X3 = k1_extreal2 (k2_supinf_2 (k12_supinf_2 \\ & X1 X3)) k1_supinf_2)))))) \end{aligned} \quad (17)$$

Assume the following.

$$k1_xboole_0 = the (\lambda X0 : \iota. v1_xboole_0 X0) \quad (18)$$

Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((v1_funct_1 X1) \wedge \\ & m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 k7_numbers)))) \Rightarrow (\\ & \forall X2. ((v1_funct_1 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 k7_numbers)))) \Rightarrow ((X2 = k1_mesfunc2 X0 X1) \Leftrightarrow ((k1_relset_1 X0 X2 = \\ & k1_relset_1 X0 X1) \wedge (\forall X3. (m1_subset_1 X3 X0) \Rightarrow ((X3 \in k1_relset_1 \\ & X0 X2) \Rightarrow (k12_supinf_2 X2 X3 = k1_extreal2 (k12_supinf_2 X1 X3) k1_supinf_2)))))) \end{aligned} \quad (19)$$

Assume the following.

$$\begin{aligned} & \forall X0. (v1_xxreal_0 X0) \Rightarrow (\forall X1. (v1_xxreal_0 X1) \Rightarrow ((\\ & (r1_xxreal_0 X1 X0) \Rightarrow (k4_xxreal_0 X0 X1 = X0)) \wedge ((\neg r1_xxreal_0 X1 \\ & X0) \Rightarrow (k4_xxreal_0 X0 X1 = X1)))) \end{aligned} \quad (20)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_xxreal_0 X0) \wedge (v1_xxreal_0 X1)) \Rightarrow (k4_xxreal_0 X0 X1 = k4_xxreal_0 X1 X0) \quad (21)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow ((v4_relat_1 X2 X0) \wedge (v5_relat_1 X2 X1)) \quad (22)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge (v5_relat_1 X0 k7_numbers)) \Rightarrow ((v1_relat_1 X0) \wedge (v2_valued_0 X0)) \quad (23)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k7_numbers) \Rightarrow (v1_xreal_0 X0) \quad (24)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow (v1_relat_1 X2) \quad (25)$$

Assume the following.

$$\forall X0.(v2_membered X0) \Rightarrow (\forall X1.(m1_subset_1 X1 X0) \Rightarrow (v1_xreal_0 X1)) \quad (26)$$

Theorem 1

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge (\\ & m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 k7_numbers)))) \Rightarrow (\\ & \forall X2.(m1_subset_1 X2 X0) \Rightarrow (((X2 \in k1_relset_1 X0 X1) \wedge (k12_supinf_2 \\ & (k1_mesfunc2 X0 X1) X2 = k1_supinf_2)) \Rightarrow (k12_supinf_2 (k2_mesfunc2 \\ & X0 X1) X2 = k2_supinf_2 (k12_supinf_2 X1 X2)))))) \end{aligned}$$