

l6_mesfunc7 (TMb- SZW7UjhLm5MUEvdYLHeUzmLydXub7AYw)

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Let $r3_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_numbers : \iota$ be given. Let $k8_mesfunc1 : \iota$ be given. Let $k1_mesfunc7 : \iota$ be given. Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Let $k4_xxreal_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $v1_binop_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_extreal1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_binop_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(v1_xxreal_0 X0) \Rightarrow (k4_xxreal_3 np_1 X0 = X0) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1_funct_1 X1) \wedge ((v1_funct_2 X1 (k2_zfmisc_1 \\ & X0 X0) X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 \\ & X0 X0) X0)))))) \Rightarrow (\forall X2.(m1_subset_1 X2 X0) \Rightarrow ((v1_binop_1 X1 \\ & X0) \Rightarrow ((r3_binop_1 X0 X2 X1) \Leftrightarrow (\forall X3.(m1_subset_1 X3 X0) \Rightarrow (k3_binop_1 \\ & X0 X1 X2 X3 = X3)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((v1_funct_1 X1) \wedge \\ & ((v1_funct_2 X1 (k2_zfmisc_1 X0 X0) X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) X0)))))) \wedge ((m1_subset_1 X2 X0) \wedge \\ & (m1_subset_1 X3 X0))) \Rightarrow (k5_binop_1 X0 X1 X2 X3 = k1_binop_1 X1 X2 X3) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((v1_funct_1 X1) \wedge \\ & ((v1_funct_2 X1 (k2_zfmisc_1 X0 X0) X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) X0)))))) \wedge ((m1_subset_1 X2 X0) \wedge \\ & (m1_subset_1 X3 X0))) \Rightarrow (k3_binop_1 X0 X1 X2 X3 = k1_binop_1 X1 X2 X3) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1 X0 k7_numbers)\wedge(m1_subset_1 X1 k7_numbers))\Rightarrow(k1_extreal1 X0 X1 = k4_xxreal_3 X0 X1) \quad (5)$$

Assume the following.

$$(v1_funct_1 k1_mesfunc7)\wedge((v1_funct_2 k1_mesfunc7 (k2_zfmisc_1 k7_numbers k7_numbers) k7_numbers)\wedge((v1_binop_1 k1_mesfunc7 k7_numbers)\wedge(v2_binop_1 k1_mesfunc7 k7_numbers))) \quad (6)$$

Assume the following.

$$m1_subset_1 k8_mesfunc1 k7_numbers \quad (7)$$

Assume the following.

$$(v1_funct_1 k1_mesfunc7)\wedge((v1_funct_2 k1_mesfunc7 (k2_zfmisc_1 k7_numbers k7_numbers) k7_numbers)\wedge(m1_subset_1 k1_mesfunc7 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 k7_numbers k7_numbers) k7_numbers)))) \quad (8)$$

Assume the following.

$$k8_mesfunc1 = np_1 \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.((v1_funct_1 X1)\wedge((v1_funct_2 X1 (k2_zfmisc_1 X0 X0) X0)\wedge(m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) X0))))))\Rightarrow((v1_binop_1 X1 X0)\Leftrightarrow(\forall X2.(m1_subset_1 X2 X0)\Rightarrow(\forall X3.(m1_subset_1 X3 X0)\Rightarrow(k3_binop_1 X0 X1 X2 X3 = k3_binop_1 X0 X1 X3 X2)))) \quad (10)$$

Assume the following.

$$\forall X0.((v1_funct_1 X0)\wedge((v1_funct_2 X0 (k2_zfmisc_1 k7_numbers k7_numbers) k7_numbers)\wedge(m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 k7_numbers k7_numbers) k7_numbers) k7_numbers))))))\Rightarrow((X0 = k1_mesfunc7)\Leftrightarrow(\forall X1.(m1_subset_1 X1 k7_numbers)\Rightarrow(\forall X2.(m1_subset_1 X2 k7_numbers)\Rightarrow(k5_binop_1 k7_numbers X0 X1 X2 = k1_extreal1 X1 X2)))) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1 X0 k7_numbers)\wedge(m1_subset_1 X1 k7_numbers))\Rightarrow(k1_extreal1 X0 X1 = k1_extreal1 X1 X0) \quad (12)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k7_numbers)\Rightarrow(v1_xxreal_0 X0) \quad (13)$$

Theorem 1 $r3_binop_1 k7_numbers k8_mesfunc1 k1_mesfunc7$.