

t32_funct_3

(TMR74m9dPB2UrBdgknrJdsn6z7pyS3LJiLP)

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Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v2_funct_1 : \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_3 : \iota \Rightarrow \iota$ be given. Let $k8_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_funct_3 : \iota \Rightarrow \iota$ be given. Let $k10_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k3_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (r1_tarski (k10_xtuple_0 (k1_funct_3 X0)) (k1_zfmisc_1 (k10_xtuple_0 X0))) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow (((r1_tarski X0 (k9_xtuple_0 X1)) \wedge (v2_funct_1 X1)) \Rightarrow (k8_relat_1 X1 (k7_relat_1 X1 X0) = X0)) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((v1_relat_1 X2) \wedge (v1_funct_1 X2)) \Rightarrow (((r1_tarski X0 (k9_xtuple_0 X2)) \wedge (r1_tarski (k7_relat_1 X2 X0) X1)) \Rightarrow (r1_tarski X0 (k8_relat_1 X2 X1))) \quad (3)$$

Assume the following.

$$\forall X0. ((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow ((\forall X1. r1_tarski (k8_relat_1 X0 (k7_relat_1 X0 X1)) X1) \Rightarrow (v2_funct_1 X0)) \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow ((v2_funct_1 X1) \Rightarrow (r1_tarski (k8_relat_1 X1 (k7_relat_1 X1 X0)) X0)) \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow ((r1_tarski X0 (k10_xtuple_0 X1)) \Rightarrow (k7_relat_1 X1 (k8_relat_1 X1 X0) = X0)) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X1)\wedge(v1_funct_1 X1))\Rightarrow(r1_tarski (k7_relat_1 X1 (k8_relat_1 X1 X0)) X0) \quad (7)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0)\wedge(v1_funct_1 X0))\Rightarrow(\forall X1.(r1_tarski X1 (k1_zfmisc_1 (k9_xtuple_0 X0)))\Rightarrow(r1_tarski (k8_relat_1 (k3_funct_3 X0) X1) (k7_relat_1 (k1_funct_3 X0) X1))) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X1)\wedge(v1_funct_1 X1))\Rightarrow((v2_funct_1 X1)\Rightarrow(k7_relat_1 (k3_funct_3 X1) X0 = k8_relat_1 (k1_funct_3 X1) X0)) \quad (9)$$

Assume the following.

$$\forall X0.(v1_relat_1 X0)\Rightarrow(\forall X1.(v1_relat_1 X1)\Rightarrow((r1_tarski (k10_xtuple_0 X0) (k9_xtuple_0 X1))\Rightarrow(k9_xtuple_0 (k3_relat_1 X0 X1) = k9_xtuple_0 X0))) \quad (10)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0)\wedge(v1_funct_1 X0))\Rightarrow((v2_funct_1 X0)\Leftrightarrow(\forall X1.((v1_relat_1 X1)\wedge(v1_funct_1 X1))\Rightarrow(\forall X2.(v1_relat_1 X2)\wedge(v1_funct_1 X2))\Rightarrow(((r1_tarski (k10_xtuple_0 X1) (k9_xtuple_0 X0))\wedge((r1_tarski (k10_xtuple_0 X2) (k9_xtuple_0 X0))\wedge((k9_xtuple_0 X1 = k9_xtuple_0 X2)\wedge(k3_relat_1 X1 X0 = k3_relat_1 X2 X0))))\Rightarrow(X1 = X2)))))) \quad (11)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0)\wedge(v1_funct_1 X0))\Rightarrow(\forall X1.((v1_relat_1 X1)\wedge(v1_funct_1 X1))\Rightarrow(((v2_funct_1 (k3_relat_1 X1 X0))\wedge(k10_xtuple_0 X1 = k9_xtuple_0 X0))\Rightarrow((v2_funct_1 X1)\wedge(v2_funct_1 X0)))) \quad (12)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0)\wedge(v1_funct_1 X0))\Rightarrow((v1_funct_1 (k1_funct_3 X0))\wedge((v1_funct_2 (k1_funct_3 X0) (k1_zfmisc_1 (k9_xtuple_0 X0)) (k1_zfmisc_1 (k10_xtuple_0 X0)))\wedge(m1_subset_1 (k1_funct_3 X0) (k1_zfmisc_1 (k2_zfmisc_1 (k1_zfmisc_1 (k9_xtuple_0 X0)) (k1_zfmisc_1 (k10_xtuple_0 X0))))))) \quad (13)$$

Assume the following.

$$\forall X0.(v1_relat_1 X0)\Rightarrow(\forall X1.(v1_relat_1 X1)\Rightarrow(k9_xtuple_0 (k3_relat_1 X0 X1) = k8_relat_1 X0 (k9_xtuple_0 X1))) \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.(v1_relat_1 X1)\Rightarrow(\forall X2.(v1_relat_1 X2)\Rightarrow(k8_relat_1 (k3_relat_1 X1 X2) X0 = k8_relat_1 X1 (k8_relat_1 X2 X0))) \quad (15)$$

Assume the following.

$$\forall X0.(v1_relat_1 X0)\Rightarrow(k8_relat_1 X0 (k10_xtuple_0 X0) = k9_xtuple_0 X0) \quad (16)$$

Assume the following.

$$\forall X0.\forall X1.(v1_relat_1 X1)\Rightarrow(r1_tarski (k8_relat_1 X1 X0) (k9_xtuple_0 X1)) \quad (17)$$

Assume the following.

$$\forall X0.\forall X1.(v1_relat_1 X1)\Rightarrow(\forall X2.(v1_relat_1 X2)\Rightarrow(k7_relat_1 (k3_relat_1 X1 X2) X0 = k7_relat_1 X2 (k7_relat_1 X1 X0))) \quad (18)$$

Assume the following.

$$\forall X0.(v1_relat_1 X0)\Rightarrow(k7_relat_1 X0 (k9_xtuple_0 X0) = k10_xtuple_0 X0) \quad (19)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X1)\wedge(v1_funct_1 X1))\Rightarrow(r1_tarski (k7_relat_1 (k1_funct_3 X1) X0) (k1_zfmisc_1 (k10_xtuple_0 X1))) \quad (20)$$

Assume the following.

$$\forall X0.\forall X1.r1_tarski X0 X0 \quad (21)$$

Assume the following.

$$\forall X0.\forall X1.(((v1_relat_1 X0)\wedge(v1_funct_1 X0))\wedge((v1_relat_1 X1)\wedge(v1_funct_1 X1)))\Rightarrow((v1_relat_1 (k3_relat_1 X0 X1))\wedge(v1_funct_1 (k3_relat_1 X0 X1))) \quad (22)$$

Assume the following.

$$\forall X0.\forall X1.v1_relat_1 (k3_relat_1 X0 X1) \quad (23)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0)\wedge(v1_funct_1 X0))\Rightarrow((v1_relat_1 (k3_funct_3 X0))\wedge(v1_funct_1 (k3_funct_3 X0))) \quad (24)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow ((v1_relat_1 (k1_funct_3 X0)) \wedge (v1_funct_1 (k1_funct_3 X0))) \quad (25)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1.((v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow ((X1 = k3_funct_3 X0) \Leftrightarrow ((k9_xtuple_0 X1 = k1_zfmisc_1 (k10_xtuple_0 X0)) \wedge (\forall X2.(r1_tarski X2 (k10_xtuple_0 X0)) \Rightarrow (k1_funct_1 X1 X2 = k8_relat_1 X0 X2)))))) \end{aligned} \quad (26)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1.((v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow ((X1 = k1_funct_3 X0) \Leftrightarrow ((k9_xtuple_0 X1 = k1_zfmisc_1 (k9_xtuple_0 X0)) \wedge (\forall X2.(r1_tarski X2 (k9_xtuple_0 X0)) \Rightarrow (k1_funct_1 X1 X2 = k7_relat_1 X0 X2)))))) \end{aligned} \quad (27)$$

Theorem 1

$$\forall X0.((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1.(v2_funct_1 X0) \Rightarrow (r1_tarski (k7_relat_1 (k1_funct_3 X0) X1) (k8_relat_1 (k3_funct_3 X0) X1)))$$