

t29_funct_7
(TMTLUw816sFFBeJw95B2wcbf4jqdEEdoBvx)

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Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $r1_funct_7 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_funct_4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_xboole_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k3_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. (v1_relat_1 X2) \Rightarrow (k5_relat_1 X2 (k6_subset_1 X0 X1) = k6_subset_1 (k5_relat_1 X2 X0) (k5_relat_1 X2 X1)) \quad (1)$$

Assume the following.

$$\forall X0. ((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1. ((v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow (\forall X2. (r1_xboole_0 X2 (k9_xtuple_0 X1)) \Rightarrow (k5_relat_1 (k1_funct_4 X0 X1) X2 = k5_relat_1 X0 X2))) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. (v1_relat_1 X1) \Rightarrow ((r1_tarski (k9_xtuple_0 X1) X0) \Rightarrow (k5_relat_1 X1 X0 = X1)) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. (v1_relat_1 X1) \Rightarrow ((k5_relat_1 X1 X0 = k1_xboole_0) \Leftrightarrow (r1_xboole_0 (k9_xtuple_0 X1) X0)) \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. (v1_relat_1 X1) \Rightarrow ((r1_tarski X0 (k9_xtuple_0 X1)) \Rightarrow (k9_xtuple_0 (k5_relat_1 X1 X0) = X0)) \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. (v1_relat_1 X1) \Rightarrow (k9_xtuple_0 (k5_relat_1 X1 X0) = k3_xboole_0 (k9_xtuple_0 X1) X0) \quad (6)$$

Assume the following.

$$\forall X0. r1_tarski\ k1_xboole_0\ X0 \quad (7)$$

Assume the following.

$$\forall X0. ((v1_relat_1\ X0) \wedge (v1_funct_1\ X0)) \Rightarrow (k1_funct_4\ k1_xboole_0\ X0 = X0) \quad (8)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (v1_relat_1\ X2) \Rightarrow ((r1_tarski\ (k9_xtuple_0\ X2)\ X0) \Rightarrow (k6_subset_1\ X2\ (k5_relat_1\ X2\ X1) = k5_relat_1\ X2\ (k6_subset_1\ X0\ X1))) \quad (9)$$

Assume the following.

$$\forall X0. ((v1_relat_1\ X0) \wedge (v1_funct_1\ X0)) \Rightarrow (\forall X1. ((v1_relat_1\ X1) \wedge (v1_funct_1\ X1)) \Rightarrow ((r1_xboole_0\ (k9_xtuple_0\ X0)\ X0)\ (k9_xtuple_0\ X1)) \Rightarrow (k6_subset_1\ (k1_funct_4\ X0\ X1)\ X1 = X0))) \quad (10)$$

Assume the following.

$$\forall X0. ((v1_relat_1\ X0) \wedge (v1_funct_1\ X0)) \Rightarrow (\forall X1. ((v1_relat_1\ X1) \wedge (v1_funct_1\ X1)) \Rightarrow ((r1_tarski\ (k9_xtuple_0\ X0)\ (k9_xtuple_0\ (k1_funct_4\ X0\ X1))) \wedge (r1_tarski\ (k9_xtuple_0\ X1)\ (k9_xtuple_0\ (k1_funct_4\ X0\ X1)))))) \quad (11)$$

Assume the following.

$$\forall X0. \forall X1. (r1_xboole_0\ X0\ X1) \Rightarrow (r1_xboole_0\ X1\ X0) \quad (12)$$

Assume the following.

$$\forall X0. (v1_relat_1\ X0) \Rightarrow (k5_relat_1\ X0\ (k9_xtuple_0\ X0) = X0) \quad (13)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_relat_1\ X0) \wedge (v1_funct_1\ X0)) \Rightarrow ((v1_relat_1\ (k5_relat_1\ X0\ X1)) \wedge (v1_funct_1\ (k5_relat_1\ X0\ X1))) \quad (14)$$

Assume the following.

$$\forall X0. \forall X1. (((v1_relat_1\ X0) \wedge (v1_funct_1\ X0)) \wedge ((v1_relat_1\ X1) \wedge (v1_funct_1\ X1))) \Rightarrow ((v1_relat_1\ (k1_funct_4\ X0\ X1)) \wedge (v1_funct_1\ (k1_funct_4\ X0\ X1))) \quad (15)$$

Assume the following.

$$\forall X0. \forall X1. (r1_xboole_0\ X0\ X1) \Leftrightarrow (k3_xboole_0\ X0\ X1 = k1_xboole_0) \quad (16)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1.((\\ v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow (\forall X2.(r1_funct_7 X0 X1 \\ X2) \Leftrightarrow (k5_relat_1 X0 (k6_subset_1 (k9_xtuple_0 X0) X2) = k5_relat_1 \\ X1 (k6_subset_1 (k9_xtuple_0 X1) X2)))) \end{aligned} \quad (17)$$

Assume the following.

$$\forall X0. \forall X1. k3_xboole_0 X0 X1 = k3_xboole_0 X1 X0 \quad (18)$$

Theorem 1

$$\begin{aligned} \forall X0.((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1.((\\ v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow (\forall X2.(r1_tarski (k9_xtuple_0 \\ X1) X2) \Rightarrow (r1_funct_7 X0 (k1_funct_4 X0 X1) X2)))) \end{aligned}$$