

t15_rfunct_4 (TM- cmTv3hxSeYfxfD14wLC9yELWQ7UFp95fH)

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Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_rfunct_4 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_numbers : \iota$ be given. Let $k3_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k26_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v2_xxreal_0 : \iota \Rightarrow o$ be given. Let $v3_xxreal_0 : \iota \Rightarrow o$ be given. Let $k1_xboole_0 : \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2_rfunct_3 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_xxreal_0 : \iota \Rightarrow o$ 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 $v1_xcmplx_0 : \iota \Rightarrow o$ be given. Let $v3_membered : \iota \Rightarrow o$ be given. Let $np_1 : \iota$ be given. Let $k9_binop_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k11_binop_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_binop_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_seq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow ((r1_xxreal_0 X0 X1) \Rightarrow ((v1_xboole_0 X0) \vee ((v2_xxreal_0 X1) \vee (v3_xxreal_0 X0)))))) \quad (1)$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (X0 = k1_xboole_0) \quad (2)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow ((r1_xxreal_0 X0 X1) \Rightarrow ((v1_xboole_0 X1) \vee ((v3_xxreal_0 X0) \vee (v2_xxreal_0 X1)))))) \quad (3)$$

Assume the following.

$$\forall X0.((v1_funct_1 X0) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers)))) \Rightarrow (\forall X1.(r1_tarski X1 (k1_relset_1 k1_numbers X0)) \Rightarrow (r2_rfunct_3 (k26_valued_1 k1_numbers k1_numbers X0 k6_numbers) X1)) \quad (4)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow (\neg(r1_xxreal_0 X0 X1) \wedge (\neg v2_xxreal_0 X1) \wedge (v2_xxreal_0 X0))) \quad (5)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow (\neg(r1_xxreal_0 X0 X1) \wedge (\neg v3_xxreal_0 X0) \wedge (v3_xxreal_0 X1))) \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_funct_1 X0) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 \\ k1_numbers k1_numbers)))) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge (m1_subset_1 \\ X1 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers)))) \Rightarrow (\forall X2. \\ ((r1_rfunct_4 X0 X2) \wedge (r2_rfunct_3 X1 X2)) \Rightarrow (r1_rfunct_4 (k3_valued_1 \\ k1_numbers k1_numbers k1_numbers X0 X1) X2))) \quad (7) \end{aligned}$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_funct_1 X0) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 \\ k1_numbers k1_numbers)))) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge (m1_subset_1 \\ X1 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers)))) \Rightarrow (\forall X2. \\ ((r1_rfunct_4 X0 X2) \wedge (r1_rfunct_4 X1 X2)) \Rightarrow (r1_rfunct_4 (k3_valued_1 \\ k1_numbers k1_numbers k1_numbers X0 X1) X2))) \quad (8) \end{aligned}$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (\forall X1.((v1_funct_1 \\ X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers)))) \Rightarrow \\ (\forall X2.(\neg r1_xxreal_0 X0 k6_numbers) \Rightarrow ((r1_rfunct_4 X1 X2) \Leftrightarrow \\ (r1_rfunct_4 (k26_valued_1 k1_numbers k1_numbers X1 X0) X2)))) \quad (9) \end{aligned}$$

Assume the following.

$$\forall X0.\forall X1.((v1_xxreal_0 X0) \wedge (v1_xxreal_0 X1)) \Rightarrow (r1_xxreal_0 X0 X0) \quad (10)$$

Assume the following.

$$k6_numbers = k1_xboole_0 \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X1) \wedge (v4_relat_1 X1 X0)) \Rightarrow (k1_relset_1 X0 X1 = k9_xtuple_0 X1) \quad (12)$$

Assume the following.

$$\exists X0.(v1_xboole_0 X0) \wedge ((v1_xcmplx_0 X0) \wedge ((v1_xxreal_0 X0) \wedge (v1_xxreal_0 X0))) \quad (13)$$

Assume the following.

$$\exists X0.(v1_xreal_0 X0) \wedge (v3_xreal_0 X0) \quad (14)$$

Assume the following.

$$v3_membered\ k1_numbers \quad (15)$$

Assume the following.

$$v1_xboole_0\ k1_xboole_0 \quad (16)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((v3_membered\ X1) \wedge \\ & (((v1_funct_1\ X2) \wedge (m1_subset_1\ X2\ (k1_zfmisc_1\ (k2_zfmisc_1 \\ & X0\ X1)))) \wedge (v1_xreal_0\ X3))) \Rightarrow ((v1_funct_1\ (k26_valued_1\ X0\ X1 \\ & X2\ X3)) \wedge (m1_subset_1\ (k26_valued_1\ X0\ X1\ X2\ X3)\ (k1_zfmisc_1\ (k2_zfmisc_1 \\ & X0\ k1_numbers)))) \end{aligned} \quad (17)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_funct_1\ X0) \wedge (m1_subset_1\ X0\ (k1_zfmisc_1\ (k2_zfmisc_1 \\ & k1_numbers\ k1_numbers)))) \Rightarrow (\forall X1.(r1_rfunct_4\ X0\ X1) \Leftrightarrow (\\ & (r1_tarSKI\ X1\ (k9_xtuple_0\ X0)) \wedge (\forall X2.(m1_subset_1\ X2\ k1_numbers) \Rightarrow \\ & (\neg(\neg r1_xreal_0\ X2\ k6_numbers) \wedge (\neg r1_xreal_0\ np_1\ X2) \wedge (\exists X3. \\ & (m1_subset_1\ X3\ k1_numbers) \wedge (\exists X4.(m1_subset_1\ X4\ k1_numbers) \wedge \\ & ((X3 \in X1) \wedge ((X4 \in X1) \wedge ((k9_binop_2\ (k11_binop_2\ X2\ X3)\ (k11_binop_2 \\ & (k10_binop_2\ np_1\ X2)\ X4) \in X1) \wedge ((X3 \neq X4) \wedge (r1_xreal_0\ (k9_binop_2 \\ & (k11_binop_2\ X2\ (k1_seq_1\ X0\ X3))\ (k11_binop_2\ (k10_binop_2\ np_1 \\ & X2)\ (k1_seq_1\ X0\ X4)))\ (k1_seq_1\ X0\ (k9_binop_2\ (k11_binop_2\ X2 \\ & X3)\ (k11_binop_2\ (k10_binop_2\ np_1\ X2)\ X4)))))))))) \end{aligned} \quad (18)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((v3_membered \\ & X1) \wedge ((v3_membered\ X2) \wedge (((v1_funct_1\ X3) \wedge (m1_subset_1\ X3\ (k1_zfmisc_1 \\ & (k2_zfmisc_1\ X0\ X1)))) \wedge ((v1_funct_1\ X4) \wedge (m1_subset_1\ X4\ (k1_zfmisc_1 \\ & (k2_zfmisc_1\ X0\ X2)))))) \Rightarrow (k3_valued_1\ X0\ X1\ X2\ X3\ X4 = k3_valued_1 \\ & X0\ X1\ X2\ X4\ X3) \end{aligned} \quad (19)$$

Assume the following.

$$\forall X0.((v1_xreal_0\ X0) \wedge (v3_xreal_0\ X0)) \Rightarrow ((\neg v1_xboole_0\ X0) \wedge ((v1_xreal_0\ X0) \wedge (\neg v2_xreal_0\ X0))) \quad (20)$$

Assume the following.

$$\forall X0.((\neg v1_xboole_0\ X0) \wedge ((v1_xreal_0\ X0) \wedge (\neg v3_xreal_0\ X0))) \Rightarrow ((v1_xreal_0\ X0) \wedge (v2_xreal_0\ X0)) \quad (21)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (v1_xxreal_0 X0) \quad (22)$$

Assume the following.

$$\forall X0.((v1_xxreal_0 X0) \wedge (v2_xxreal_0 X0)) \Rightarrow ((\neg v1_xboole_0 X0) \wedge ((v1_xxreal_0 X0) \wedge (\neg v3_xxreal_0 X0))) \quad (23)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow ((v4_relat_1 X2 X0) \wedge (v5_relat_1 X2 X1)) \quad (24)$$

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.

$$\forall X0.(v3_membered X0) \Rightarrow (\forall X1.(m1_subset_1 X1 X0) \Rightarrow (v1_xreal_0 X1)) \quad (26)$$

Theorem 1

$$\begin{aligned} & \forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (\forall X1.(m1_subset_1 \\ & X1 k1_numbers) \Rightarrow (\forall X2.((v1_funct_1 X2) \wedge (m1_subset_1 X2 \\ & (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers)))))) \Rightarrow (\forall X3. \\ & ((v1_funct_1 X3) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers \\ & k1_numbers)))))) \Rightarrow (\forall X4.((r1_rfunct_4 X2 X4) \wedge (r1_rfunct_4 \\ & X3 X4)) \Rightarrow (((\neg(\neg r1_xxreal_0 X0 k6_numbers) \wedge (r1_xxreal_0 k6_numbers \\ & X1)) \wedge (\neg(r1_xxreal_0 k6_numbers X0) \wedge (\neg r1_xxreal_0 X1 k6_numbers))) \vee \\ & (r1_rfunct_4 (k3_valued_1 k1_numbers k1_numbers k1_numbers (\\ & k26_valued_1 k1_numbers k1_numbers X2 X0) (k26_valued_1 k1_numbers \\ & k1_numbers X3 X1)) X4)))))) \end{aligned}$$