

t25_rewrite3

(TMPci79VrYSTsF9EobWmeukJjAFptG9gkLr)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k8_afinsq_1 : \iota \Rightarrow \iota$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $l1_rewrite3 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r2_rewrite3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_flang_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v5_ordinal1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_finset_1 : \iota \Rightarrow o$ be given. Let $k1_ordinal4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_rewrite3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_catalan2 : \iota \Rightarrow \iota$ be given. Let $v4_funct_1 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge ((v5_ordinal1 X0) \wedge ((v1_funct_1 \\ & X0) \wedge (v1_finset_1 X0)))) \Rightarrow (\forall X1.((v1_relat_1 X1) \wedge ((v5_ordinal1 \\ & X1) \wedge ((v1_funct_1 X1) \wedge (v1_finset_1 X1)))) \Rightarrow (\forall X2.((v1_relat_1 \\ & X2) \wedge ((v5_ordinal1 X2) \wedge ((v1_funct_1 X2) \wedge (v1_finset_1 X2)))) \Rightarrow \\ & (k1_ordinal4 (k1_ordinal4 X0 X1) X2 = k1_ordinal4 X0 (k1_ordinal4 \\ & X1 X2)))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (\neg v1_xboole_0 X2) \Rightarrow (\forall X3. \\ & (m1_subset_1 X3 (k8_afinsq_1 X2)) \Rightarrow (\forall X4. (m1_subset_1 X4 \\ & (k8_afinsq_1 X2)) \Rightarrow (\forall X5. (m1_subset_1 X5 (k1_zfmisc_1 (\\ & k8_afinsq_1 X2)) \Rightarrow (\forall X6. (l1_rewrite3 X6 X5) \Rightarrow (\neg (r2_rewrite3 \\ & X2 X5 X6 X0 X3 X1 X4) \wedge (\forall X7. (m1_subset_1 X7 (k8_afinsq_1 X2)) \Rightarrow \\ & (\neg (r1_rewrite3 X5 X6 X0 X7 X1) \wedge (X3 = k1_flang_1 X2 X7 X4)))))))) \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0. k3_catalan2 X0 = k8_afinsq_1 X0 \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((m1_subset_1 X1 (k3_catalan2 \\ & X0)) \wedge (m1_subset_1 X2 (k3_catalan2 X0))) \Rightarrow (k1_flang_1 X0 X1 X2 = \\ & k1_ordinal4 X1 X2) \end{aligned} \tag{4}$$

Assume the following.

$$\forall X0.v4_funct_1 (k8_afinsq_1 X0) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((m1_subset_1 X1 (k3_catalan2 \\ & X0)) \wedge (m1_subset_1 X2 (k3_catalan2 X0))) \Rightarrow (m1_subset_1 (k1_flang_1 \\ & X0 X1 X2) (k3_catalan2 X0)) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 \\ & (k8_afinsq_1 X0))) \Rightarrow (\forall X2.(l1_rewrite3 X2 X1) \Rightarrow (\forall X3. \\ & \forall X4.\forall X5.\forall X6.(r2_rewrite3 X0 X1 X2 X3 X4 X5 X6) \Leftrightarrow \\ & (\exists X7.(m1_subset_1 X7 (k8_afinsq_1 X0)) \wedge (\exists X8.(m1_subset_1 \\ & X8 (k8_afinsq_1 X0)) \wedge ((X7 = X6) \wedge ((r1_rewrite3 X1 X2 X3 X8 X5) \wedge (X4 = \\ & k1_flang_1 X0 X8 X7))))))) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0.(v4_funct_1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 X0) \Rightarrow (v1_relat_1 X1) \wedge (v1_funct_1 X1)) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1 X1 (k8_afinsq_1 X0)) \Rightarrow ((v5_ordinal1 X1) \wedge (v1_finset_1 X1)) \quad (9)$$

Theorem 1

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(\neg v1_xboole_0 X2) \Rightarrow (\forall X3. \\ & (m1_subset_1 X3 (k8_afinsq_1 X2)) \Rightarrow (\forall X4.(m1_subset_1 X4 \\ & (k8_afinsq_1 X2)) \Rightarrow (\forall X5.(m1_subset_1 X5 (k8_afinsq_1 X2)) \Rightarrow \\ & (\forall X6.(m1_subset_1 X6 (k1_zfmisc_1 (k8_afinsq_1 X2))) \Rightarrow \\ & (\forall X7.(l1_rewrite3 X7 X6) \Rightarrow ((r2_rewrite3 X2 X6 X7 X0 X3 X1 X4) \Rightarrow \\ & (r2_rewrite3 X2 X6 X7 X0 (k1_flang_1 X2 X3 X5) X1 (k1_flang_1 X2 X4 \\ & X5)))))))) \end{aligned}$$