

l8_arytm_2

(TMdg7LAjzGSqpxFk3VgLYCW6udr94DSvkd4)

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Let $k2_arytm_2 : \iota$ be given. Let $k2_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_arytm_3 : \iota$ be given. Let $k7_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $r3_arytm_3 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Let $k11_arytm_3 : \iota$ be given. Let $r1_xboole_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_arytm_2 : \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (r1_xboole_0 X0 X1) \Rightarrow (k2_xboole_0 \\ & (k4_xboole_0 X2 X0) X1 = k4_xboole_0 (k2_xboole_0 X2 X1) X0) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (r1_xboole_0 X0 X1) \Rightarrow (r1_xboole_0 X1 X0) \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (m1_subset_1 X1 (k1_zfmisc_1 \\ & X0)) \Rightarrow (k7_subset_1 X0 X1 X2 = k4_xboole_0 X1 X2) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. k6_subset_1 X0 X1 = k4_xboole_0 X0 X1 \quad (4)$$

Assume the following.

$$\begin{aligned} & r1_xboole_0 k5_arytm_3 (ReplSep (toset (\lambda X0 : \iota. m1_subset_1 \\ & X0 k5_arytm_3)) (\lambda X0 : \iota. X0 \neq k11_arytm_3) (\lambda X0 : \iota. ReplSep \\ & (toset (\lambda X1 : \iota. m1_subset_1 X1 k5_arytm_3)) (\lambda X1 : \iota. \\ & \neg r3_arytm_3 X0 X1) (\lambda X1 : \iota. X1))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. m1_subset_1 (k6_subset_1 X0 X1) (k1_zfmisc_1 X0) \quad (6)$$

Assume the following.

$$\begin{aligned}
k2_arytm_2 = & k6_subset_1 (k2_xboole_0 k5_arytm_3 k1_arytm_2) \\
& (ReplSep (toset (\lambda X0 : \iota.m1_subset_1 X0 k5_arytm_3)) (\lambda X0 : \\
& \iota.X0 \neq k11_arytm_3) (\lambda X0 : \iota.ReplSep (toset (\lambda X1 : \iota. \\
& m1_subset_1 X1 k5_arytm_3)) (\lambda X1 : \iota.\neg r3_arytm_3 X0 X1) (\lambda X1 : \\
& \iota.X1)))) \tag{7}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
k1_arytm_2 = & k6_subset_1 (ReplSep (toset (\lambda X0 : \iota.m1_subset_1 \\
& X0 (k1_zfmisc_1 k5_arytm_3)) (\lambda X0 : \iota.\forall X1.(m1_subset_1 \\
& X1 k5_arytm_3) \Rightarrow ((X1 \in X0) \Rightarrow ((\forall X2.(m1_subset_1 X2 k5_arytm_3) \Rightarrow \\
& (r3_arytm_3 X2 X1) \Rightarrow (X2 \in X0))) \wedge (\exists X2.(m1_subset_1 X2 k5_arytm_3) \wedge \\
& ((X2 \in X0) \wedge (\neg r3_arytm_3 X2 X1)))))) (\lambda X0 : \iota.X0)) (k1_tarski \\
& k5_arytm_3)) \tag{8}
\end{aligned}$$

Assume the following.

$$\forall X0.\forall X1.k2_xboole_0 X0 X1 = k2_xboole_0 X1 X0 \tag{9}$$

Theorem 1

$$\begin{aligned}
k2_arytm_2 = & k2_xboole_0 k5_arytm_3 (k7_subset_1 (ReplSep (toset \\
& (\lambda X0 : \iota.m1_subset_1 X0 (k1_zfmisc_1 k5_arytm_3)) (\lambda X0 : \\
& \iota.\forall X1.(m1_subset_1 X1 k5_arytm_3) \Rightarrow ((X1 \in X0) \Rightarrow ((\forall X2. \\
& (m1_subset_1 X2 k5_arytm_3) \Rightarrow ((r3_arytm_3 X2 X1) \Rightarrow (X2 \in X0))) \wedge (\\
& \exists X2.(m1_subset_1 X2 k5_arytm_3) \wedge ((X2 \in X0) \wedge (\neg r3_arytm_3 \\
& X2 X1)))))) (\lambda X0 : \iota.X0)) (k6_subset_1 (ReplSep (toset (\lambda X0 : \\
& \iota.m1_subset_1 X0 (k1_zfmisc_1 k5_arytm_3)) (\lambda X0 : \iota.\forall X1. \\
& (m1_subset_1 X1 k5_arytm_3) \Rightarrow ((X1 \in X0) \Rightarrow ((\forall X2.(m1_subset_1 \\
& X2 k5_arytm_3) \Rightarrow ((r3_arytm_3 X2 X1) \Rightarrow (X2 \in X0))) \wedge (\exists X2.(m1_subset_1 \\
& X2 k5_arytm_3) \wedge ((X2 \in X0) \wedge (\neg r3_arytm_3 X2 X1)))))) (\lambda X0 : \iota. \\
& X0)) (k1_tarski k5_arytm_3)) (ReplSep (toset (\lambda X0 : \iota.m1_subset_1 \\
& X0 k5_arytm_3)) (\lambda X0 : \iota.X0 \neq k11_arytm_3) (\lambda X0 : \iota.ReplSep \\
& (toset (\lambda X1 : \iota.m1_subset_1 X1 k5_arytm_3)) (\lambda X1 : \iota. \\
& \neg r3_arytm_3 X0 X1) (\lambda X1 : \iota.X1))))
\end{aligned}$$