t93_arytm_3 (TMR4FyQS2MSGB9vYK1q6PPx5eUHZK33Sfse)

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Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5\_arytm\_3 : \iota$ be given. Let $r3\_arytm\_3 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9\_arytm\_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ k5\_arytm\_3) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ k5\_arytm\_3) \Rightarrow (\neg \forall X2.(m1\_subset\_1\ X2\ k5\_arytm\_3) \Rightarrow ((k9\_arytm\_3\ X0\ X2 \neq X1) \wedge (k9\_arytm\_3\ X1\ X2 \neq X0)))) \tag{1}$$

Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ k5\_arytm\_3) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ k5\_arytm\_3) \Rightarrow (r3\_arytm\_3\ X0\ (k9\_arytm\_3\ X0\ X1))) \tag{2}$$

Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ k5\_arytm\_3) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ k5\_arytm\_3) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ k5\_arytm\_3) \Rightarrow ((r3\_arytm\_3\ (k9\_arytm\_3\ X0\ X1)\ (k9\_arytm\_3\ X2\ X1)) \Leftrightarrow (r3\_arytm\_3\ X0\ X2)))) \tag{3}$$

Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ k5\_arytm\_3) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ k5\_arytm\_3) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ k5\_arytm\_3) \Rightarrow (\neg (\neg r3\_arytm\_3\ X1\ X0) \wedge ((\neg r3\_arytm\_3\ X2\ X1) \wedge (r3\_arytm\_3\ X2\ X0))))) \tag{4}$$

Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ k5\_arytm\_3) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ k5\_arytm\_3) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ k5\_arytm\_3) \Rightarrow (\neg ((\neg r3\_arytm\_3\ X1\ X0) \wedge (r3\_arytm\_3\ X1\ X2)) \vee ((r3\_arytm\_3\ X0\ X1) \wedge (\neg r3\_arytm\_3\ X2\ X1))) \wedge (r3\_arytm\_3\ X2\ X0)))) \tag{5}$$

Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ k5\_arytm\_3) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ k5\_arytm\_3) \Rightarrow ((\neg r3\_arytm\_3\ X1\ X0) \Leftrightarrow ((r3\_arytm\_3\ X0\ X1) \wedge (X0 \neq X1)))) \tag{6}$$

Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ k5\_arytm\_3)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ k5\_arytm\_3)\Rightarrow(((r3\_arytm\_3\ X0\ X1)\wedge(r3\_arytm\_3\ X1\ X0))\Rightarrow(X0 = X1))) \tag{7}$$

Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ k5\_arytm\_3)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ k5\_arytm\_3)\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ k5\_arytm\_3)\Rightarrow((k9\_arytm\_3\ X0\ X1 = k9\_arytm\_3\ X2\ X1)\Rightarrow(X0 = X2)))) \tag{8}$$

Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ k5\_arytm\_3)\Rightarrow(\exists X1.(m1\_subset\_1\ X1\ k5\_arytm\_3)\wedge(X0 = k9\_arytm\_3\ X1\ X1)) \tag{9}$$

Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ k5\_arytm\_3)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ k5\_arytm\_3)\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ k5\_arytm\_3)\Rightarrow(k9\_arytm\_3\ (k9\_arytm\_3\ X0\ X1)\ X2 = k9\_arytm\_3\ X0\ (k9\_arytm\_3\ X1\ X2)))) \tag{10}$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1\ X0\ k5\_arytm\_3)\wedge(m1\_subset\_1\ X1\ k5\_arytm\_3))\Rightarrow(m1\_subset\_1\ (k9\_arytm\_3\ X0\ X1)\ k5\_arytm\_3) \tag{11}$$

Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ k5\_arytm\_3)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ k5\_arytm\_3)\Rightarrow((r3\_arytm\_3\ X0\ X1)\Leftrightarrow(\exists X2.(m1\_subset\_1\ X2\ k5\_arytm\_3)\wedge(X1 = k9\_arytm\_3\ X0\ X2)))) \tag{12}$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1\ X0\ k5\_arytm\_3)\wedge(m1\_subset\_1\ X1\ k5\_arytm\_3))\Rightarrow(k9\_arytm\_3\ X0\ X1 = k9\_arytm\_3\ X1\ X0) \tag{13}$$

Theorem 1

$$\forall X0.(m1\_subset\_1\ X0\ k5\_arytm\_3)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ k5\_arytm\_3)\Rightarrow(\neg(\neg r3\_arytm\_3\ X1\ X0)\wedge(\forall X2.(m1\_subset\_1\ X2\ k5\_arytm\_3)\Rightarrow(\neg(\neg r3\_arytm\_3\ X2\ X0)\wedge(\neg r3\_arytm\_3\ X1\ X2)))))$$