t87_arytm_3 (TMH-BRvwpF6AoZahtQEXT1J7HV6Ahv85k8pw)

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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.

$$\forall X0.(m1\_subset\_1\ X0\ k5\_arytm\_3) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ k5\_arytm\_3) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ k5\_arytm\_3) \Rightarrow (\neg(r3\_arytm\_3\ X0\ X1) \wedge ((r3\_arytm\_3\ X1\ (k9\_arytm\_3\ X0\ X2)) \wedge (\forall X3.(m1\_subset\_1\ X3\ k5\_arytm\_3) \Rightarrow (\neg(X1 = k9\_arytm\_3\ X0\ X3) \wedge (r3\_arytm\_3\ X3\ X2))))))) \tag{1}$$

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.

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

Theorem 1

$$\forall X0.(m1\_subset\_1\ X0\ k5\_arytm\_3) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ k5\_arytm\_3) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ k5\_arytm\_3) \Rightarrow (\neg(r3\_arytm\_3\ X0\ (k9\_arytm\_3\ X1\ X2)) \wedge (\forall X3.(m1\_subset\_1\ X3\ k5\_arytm\_3) \Rightarrow (\forall X4.(m1\_subset\_1\ X4\ k5\_arytm\_3) \Rightarrow (\neg(X0 = k9\_arytm\_3\ X3\ X4) \wedge ((r3\_arytm\_3\ X3\ X1) \wedge (r3\_arytm\_3\ X4\ X2))))))))$$