

# t47\_arytm\_3

(TMXY5giiBm5rGpmYyYzEace5Dw66PS8ZNVZ)

October 27, 2020

Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k9\_arytm\_3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k8\_arytm\_3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k8\_ordinal3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k11\_ordinal2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k10\_ordinal2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_ordinal3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0.(v3\_ordinal1 X0) \Rightarrow (\forall X1.(v3\_ordinal1 X1) \Rightarrow (\forall X2. \\ & (v3\_ordinal1 X2) \Rightarrow (k11\_ordinal2 (k10\_ordinal2 X0 X1) X2 = k10\_ordinal2 \\ & (k11\_ordinal2 X0 X2) (k11\_ordinal2 X1 X2)))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.((v3\_ordinal1 X0) \wedge (v7\_ordinal1 X0)) \Rightarrow (\forall X1. \\ & ((v3\_ordinal1 X1) \wedge (v7\_ordinal1 X1)) \Rightarrow (\forall X2.((v3\_ordinal1 \\ & X2) \wedge (v7\_ordinal1 X2)) \Rightarrow (\forall X3.((v3\_ordinal1 X3) \wedge (v7\_ordinal1 \\ & X3)) \Rightarrow (\neg(X1 \neq k1\_xboole\_0) \wedge ((X0 \neq k1\_xboole\_0) \wedge (k9\_arytm\_3 (k8\_arytm\_3 \\ & X2 X1) (k8\_arytm\_3 X3 X0) \neq k8\_arytm\_3 (k8\_ordinal3 (k9\_ordinal3 \\ & X2 X0) (k9\_ordinal3 X1 X3)) (k9\_ordinal3 X1 X0)))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.((v3\_ordinal1 X0) \wedge (v7\_ordinal1 X0)) \Rightarrow (\forall X1. \\ & ((v3\_ordinal1 X1) \wedge (v7\_ordinal1 X1)) \Rightarrow (\forall X2.((v3\_ordinal1 \\ & X2) \wedge (v7\_ordinal1 X2)) \Rightarrow ((X0 \neq k1\_xboole\_0) \Rightarrow (k8\_arytm\_3 (k9\_ordinal3 \\ & X1 X0) (k9\_ordinal3 X2 X0) = k8\_arytm\_3 X1 X2)))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1.(((v3\_ordinal1 X0) \wedge (v7\_ordinal1 X0)) \wedge \\ & ((v3\_ordinal1 X1) \wedge (v7\_ordinal1 X1))) \Rightarrow (k9\_ordinal3 X0 X1 = k11\_ordinal2 \\ & X0 X1) \end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((v3\_ordinal1\ X0)\wedge(v7\_ordinal1\ X0))\wedge \\ & ((v3\_ordinal1\ X1)\wedge(v7\_ordinal1\ X1)))\Rightarrow(k8\_ordinal3\ X0\ X1 = k10\_ordinal2 \\ & \quad X0\ X1) \end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v7\_ordinal1\ X0)\wedge(v7\_ordinal1\ X1))\Rightarrow( \\ & (v3\_ordinal1\ (k10\_ordinal2\ X0\ X1))\wedge(v7\_ordinal1\ (k10\_ordinal2 \\ & \quad X0\ X1))) \end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((v3\_ordinal1\ X0)\wedge(v7\_ordinal1\ X0))\wedge \\ & ((v3\_ordinal1\ X1)\wedge(v7\_ordinal1\ X1)))\Rightarrow((v3\_ordinal1\ (k11\_ordinal2 \\ & \quad X0\ X1))\wedge(v7\_ordinal1\ (k11\_ordinal2\ X0\ X1))) \end{aligned} \tag{7}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v3\_ordinal1\ X0)\wedge(v3\_ordinal1\ X1))\Rightarrow( \\ & \quad v3\_ordinal1\ (k11\_ordinal2\ X0\ X1)) \end{aligned} \tag{8}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((v3\_ordinal1\ X0)\wedge(v7\_ordinal1\ X0))\wedge \\ & ((v3\_ordinal1\ X1)\wedge(v7\_ordinal1\ X1)))\Rightarrow(k9\_ordinal3\ X0\ X1 = k9\_ordinal3 \\ & \quad X1\ X0) \end{aligned} \tag{9}$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((v3\_ordinal1\ X0)\wedge(v7\_ordinal1\ X0))\Rightarrow(\forall X1. \\ & ((v3\_ordinal1\ X1)\wedge(v7\_ordinal1\ X1))\Rightarrow(\forall X2.((v3\_ordinal1 \\ & X2)\wedge(v7\_ordinal1\ X2))\Rightarrow((X0\neq k1\_xboole\_0)\Rightarrow(k9\_arytm\_3\ (k8\_arytm\_3 \\ & X1\ X0)\ (k8\_arytm\_3\ X2\ X0) = k8\_arytm\_3\ (k8\_ordinal3\ X1\ X2)\ X0)))) \end{aligned}$$