

t32_interva1 (TM- baFWp8KYmTbzxJhPHKsPHzMrH8VogphLy)

October 27, 2020

Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m1_interval : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_interval : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_interval : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_interval : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_interval : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k3_setfam_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_setfam_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v1_xboole_0 X1) \wedge ((v1_interval X1 X0) \wedge \\ & \quad (m1_subset_1 X1 (k1_zfmisc_1 (k1_zfmisc_1 X0)))))) \Rightarrow (\forall X2. \\ & ((\neg v1_xboole_0 X2) \wedge ((v1_interval X2 X0) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\ & \quad (k1_zfmisc_1 X0)))))) \Rightarrow (\forall X3. ((\neg v1_xboole_0 X3) \wedge ((v1_interval \\ & X3 X0) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k1_zfmisc_1 X0)))))) \Rightarrow (k3_setfam_1 \\ & X1 (k2_setfam_1 X2 X3) = k2_setfam_1 (k3_setfam_1 X1 X2) (k3_setfam_1 \\ & \quad X1 X3))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((\neg v1_xboole_0 X0) \wedge (((\neg v1_xboole_0 \\ & X1) \wedge (m1_interval X1 X0)) \wedge ((\neg v1_xboole_0 X2) \wedge (m1_interval X2 \\ & \quad X0)))) \Rightarrow ((r1_interval X0 X1 X2) \Leftrightarrow (X1 = X2)) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((\neg v1_xboole_0 X1) \wedge \\ & (m1_interval X1 X0)) \Rightarrow ((\neg v1_xboole_0 X1) \wedge ((v1_interval X1 X0) \wedge \\ & \quad (m1_subset_1 X1 (k1_zfmisc_1 (k1_zfmisc_1 X0)))))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((\neg v1_xboole_0 X0) \wedge (((\neg v1_xboole_0 \\ & X1) \wedge (m1_interval X1 X0)) \wedge ((\neg v1_xboole_0 X2) \wedge (m1_interval X2 \\ & \quad X0)))) \Rightarrow (\neg v1_xboole_0 (k4_interval X0 X1 X2)) \end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((\neg v1_xboole_0 X0) \wedge (((\neg v1_xboole_0 \\ & X1) \wedge (m1_interval X1 X0)) \wedge ((\neg v1_xboole_0 X2) \wedge (m1_interval X2 \\ & \quad X0)))) \Rightarrow (\neg v1_xboole_0 (k3_interval X0 X1 X2)) \end{aligned} \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.(m1_interval1\ X1\ X0)\Rightarrow(m1_subset_1\ X1\ (k1_zfmisc_1\ (k1_zfmisc_1\ X0))) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1_xboole_0\ X0)\wedge(((\neg v1_xboole_0\ X1)\wedge(m1_interval1\ X1\ X0))\wedge((\neg v1_xboole_0\ X2)\wedge(m1_interval1\ X2\ X0))))\Rightarrow(m1_interval1\ (k4_interval1\ X0\ X1\ X2)\ X0) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1_xboole_0\ X0)\wedge(((\neg v1_xboole_0\ X1)\wedge(m1_interval1\ X1\ X0))\wedge((\neg v1_xboole_0\ X2)\wedge(m1_interval1\ X2\ X0))))\Rightarrow(m1_interval1\ (k3_interval1\ X0\ X1\ X2)\ X0) \quad (8)$$

Assume the following.

$$\forall X0.(\neg v1_xboole_0\ X0)\Rightarrow(\forall X1.((\neg v1_xboole_0\ X1)\wedge(m1_interval1\ X1\ X0))\Rightarrow(\forall X2.((\neg v1_xboole_0\ X2)\wedge(m1_interval1\ X2\ X0))\Rightarrow(k4_interval1\ X0\ X1\ X2 = k2_setfam_1\ X1\ X2))) \quad (9)$$

Assume the following.

$$\forall X0.(\neg v1_xboole_0\ X0)\Rightarrow(\forall X1.((\neg v1_xboole_0\ X1)\wedge(m1_interval1\ X1\ X0))\Rightarrow(\forall X2.((\neg v1_xboole_0\ X2)\wedge(m1_interval1\ X2\ X0))\Rightarrow(k3_interval1\ X0\ X1\ X2 = k3_setfam_1\ X1\ X2))) \quad (10)$$

Theorem 1

$$\forall X0.(\neg v1_xboole_0\ X0)\Rightarrow(\forall X1.((\neg v1_xboole_0\ X1)\wedge(m1_interval1\ X1\ X0))\Rightarrow(\forall X2.((\neg v1_xboole_0\ X2)\wedge(m1_interval1\ X2\ X0))\Rightarrow(\forall X3.((\neg v1_xboole_0\ X3)\wedge(m1_interval1\ X3\ X0))\Rightarrow(r1_interval1\ X0\ (k3_interval1\ X0\ X1\ (k4_interval1\ X0\ X2\ X3))\ (k4_interval1\ X0\ (k3_interval1\ X0\ X1\ X2)\ (k3_interval1\ X0\ X1\ X3))))))$$