

## t47\_ec\_pf\_2

(TMaiYUibvv1aH89oeSGgbvn4JxJk7LnVbAi)

October 27, 2020

Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v1\_int\_2 : \iota \Rightarrow o$  be given. Let  $v1\_ec\_pf\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $np\_5 : \iota$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k9\_int\_3 : \iota \Rightarrow \iota$  be given. Let  $k1\_ec\_pf\_2 : \iota \Rightarrow \iota$  be given. Let  $k3\_ec\_pf\_1 : \iota \Rightarrow \iota$  be given. Let  $k6\_ec\_pf\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_ec\_pf\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_ec\_pf\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_ec\_pf\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k9\_ec\_pf\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k8\_ec\_pf\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((v7\_ordinal1 X0) \wedge ((v1\_int\_2 X0) \wedge (v1\_ec\_pf\_2 X0 np\_5))) \Rightarrow \\ & \quad (\forall X1.(m2\_subset\_1 X1 (k2\_zfmisc\_1 (u1\_struct\_0 (k9\_int\_3 \\ & \quad X0)) (u1\_struct\_0 (k9\_int\_3 X0))) (k1\_ec\_pf\_2 X0)) \Rightarrow (\forall X2. \\ & (m2\_subset\_1 X2 (k3\_ec\_pf\_1 (k9\_int\_3 X0)) (k6\_ec\_pf\_1 X0 (k2\_ec\_pf\_2 \\ & X0 X1) (k3\_ec\_pf\_2 X0 X1))) \Rightarrow (\forall X3.(m2\_subset\_1 X3 (k3\_ec\_pf\_1 \\ & (k9\_int\_3 X0)) (k6\_ec\_pf\_1 X0 (k2\_ec\_pf\_2 X0 X1) (k3\_ec\_pf\_2 X0 \\ & X1))) \Rightarrow ((r1\_ec\_pf\_1 X0 X2 X3) \Leftrightarrow (r1\_ec\_pf\_1 X0 (k9\_ec\_pf\_2 X0 X1 ( \\ & k8\_ec\_pf\_2 X0 X1) X2) (k9\_ec\_pf\_2 X0 X1 (k8\_ec\_pf\_2 X0 X1) X3)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v7\_ordinal1 X0) \wedge ((v1\_int\_2 X0) \wedge (v1\_ec\_pf\_2 X0 np\_5))) \Rightarrow \\ & \quad (\forall X1.(m2\_subset\_1 X1 (k2\_zfmisc\_1 (u1\_struct\_0 (k9\_int\_3 \\ & \quad X0)) (u1\_struct\_0 (k9\_int\_3 X0))) (k1\_ec\_pf\_2 X0)) \Rightarrow (\forall X2. \\ & (m2\_subset\_1 X2 (k3\_ec\_pf\_1 (k9\_int\_3 X0)) (k6\_ec\_pf\_1 X0 (k2\_ec\_pf\_2 \\ & X0 X1) (k3\_ec\_pf\_2 X0 X1))) \Rightarrow (k9\_ec\_pf\_2 X0 X1 (k8\_ec\_pf\_2 X0 X1) \\ & (k9\_ec\_pf\_2 X0 X1 (k8\_ec\_pf\_2 X0 X1) X2) = X2))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v1\_xboole\_0 X0) \wedge ((\neg v1\_xboole\_0 X1) \wedge \\ & (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)))) \Rightarrow (\forall X2.(m2\_subset\_1 \\ & X2 X0 X1) \Leftrightarrow (m1\_subset\_1 X2 X1)) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.((v7\_ordinal1\ X0)\wedge((v1\_int\_2\ X0)\wedge(v1\_ec\_pf\_2\ X0\ np\_5)))\Rightarrow (\neg v1\_xboole\_0\ (k1\_ec\_pf\_2\ X0)) \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((v7\_ordinal1\ X0)\wedge \\ & ((v1\_int\_2\ X0)\wedge(v1\_ec\_pf\_2\ X0\ np\_5)))\wedge((m1\_subset\_1\ X1\ (k1\_ec\_pf\_2 \\ & X0))\wedge(((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ (k6\_ec\_pf\_1\ X0\ (k2\_ec\_pf\_2 \\ & X0\ X1)\ (k3\_ec\_pf\_2\ X0\ X1))\ (k6\_ec\_pf\_1\ X0\ (k2\_ec\_pf\_2\ X0\ X1)\ (k3\_ec\_pf\_2 \\ & X0\ X1)))\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k6\_ec\_pf\_1 \\ & X0\ (k2\_ec\_pf\_2\ X0\ X1)\ (k3\_ec\_pf\_2\ X0\ X1))\ (k6\_ec\_pf\_1\ X0\ (k2\_ec\_pf\_2 \\ & X0\ X1)\ (k3\_ec\_pf\_2\ X0\ X1))))))\wedge(m1\_subset\_1\ X3\ (k6\_ec\_pf\_1\ X0 \\ & (k2\_ec\_pf\_2\ X0\ X1)\ (k3\_ec\_pf\_2\ X0\ X1))))))\Rightarrow(m2\_subset\_1\ (k9\_ec\_pf\_2 \\ & X0\ X1\ X2\ X3)\ (k3\_ec\_pf\_1\ (k9\_int\_3\ X0))\ (k6\_ec\_pf\_1\ X0\ (k2\_ec\_pf\_2 \\ & X0\ X1)\ (k3\_ec\_pf\_2\ X0\ X1))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((v7\_ordinal1\ X0)\wedge((v1\_int\_2\ X0)\wedge(v1\_ec\_pf\_2 \\ & X0\ np\_5)))\wedge(m1\_subset\_1\ X1\ (k1\_ec\_pf\_2\ X0)))\Rightarrow((v1\_funct\_1\ ( \\ & k8\_ec\_pf\_2\ X0\ X1))\wedge((v1\_funct\_2\ (k8\_ec\_pf\_2\ X0\ X1)\ (k6\_ec\_pf\_1 \\ & X0\ (k2\_ec\_pf\_2\ X0\ X1)\ (k3\_ec\_pf\_2\ X0\ X1))\ (k6\_ec\_pf\_1\ X0\ (k2\_ec\_pf\_2 \\ & X0\ X1)\ (k3\_ec\_pf\_2\ X0\ X1)))\wedge(m1\_subset\_1\ (k8\_ec\_pf\_2\ X0\ X1)\ (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1\ (k6\_ec\_pf\_1\ X0\ (k2\_ec\_pf\_2\ X0\ X1)\ (k3\_ec\_pf\_2\ X0\ X1)) \\ & (k6\_ec\_pf\_1\ X0\ (k2\_ec\_pf\_2\ X0\ X1)\ (k3\_ec\_pf\_2\ X0\ X1)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((v7\_ordinal1\ X0)\wedge(v1\_int\_2 \\ & X0))\wedge((m1\_subset\_1\ X1\ (u1\_struct\_0\ (k9\_int\_3\ X0)))\wedge(m1\_subset\_1 \\ & X2\ (u1\_struct\_0\ (k9\_int\_3\ X0))))))\Rightarrow((\neg v1\_xboole\_0\ (k6\_ec\_pf\_1 \\ & X0\ X1\ X2))\wedge(m1\_subset\_1\ (k6\_ec\_pf\_1\ X0\ X1\ X2)\ (k1\_zfmisc\_1\ (k3\_ec\_pf\_1 \\ & (k9\_int\_3\ X0)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.(((v7\_ordinal1\ X0)\wedge((v1\_int\_2\ X0)\wedge(v1\_ec\_pf\_2\ X0\ np\_5)))\wedge(m1\_subset\_1\ X1\ (k1\_ec\_pf\_2\ X0)))\Rightarrow(m1\_subset\_1\ (k3\_ec\_pf\_2\ X0\ X1)\ (u1\_struct\_0\ (k9\_int\_3\ X0))) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.(((v7\_ordinal1\ X0)\wedge((v1\_int\_2\ X0)\wedge(v1\_ec\_pf\_2\ X0\ np\_5)))\wedge(m1\_subset\_1\ X1\ (k1\_ec\_pf\_2\ X0)))\Rightarrow(m1\_subset\_1\ (k2\_ec\_pf\_2\ X0\ X1)\ (u1\_struct\_0\ (k9\_int\_3\ X0))) \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0.((v7\_ordinal1\ X0)\wedge((v1\_int\_2\ X0)\wedge(v1\_ec\_pf\_2\ X0\ np\_5)))\Rightarrow \\ (m1\_subset\_1\ (k1\_ec\_pf\_2\ X0)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0 \\ (k9\_int\_3\ X0))\ (u1\_struct\_0\ (k9\_int\_3\ X0)))))) \end{aligned} \quad (10)$$

Assume the following.

$$\forall X0.(v1\_xboole\_0\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0))\Rightarrow(v1\_xboole\_0\ X1)) \quad (11)$$

**Theorem 1**

$$\begin{aligned} \forall X0.((v7\_ordinal1\ X0)\wedge((v1\_int\_2\ X0)\wedge(v1\_ec\_pf\_2\ X0\ np\_5)))\Rightarrow \\ (\forall X1.(m2\_subset\_1\ X1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ (k9\_int\_3 \\ X0))\ (u1\_struct\_0\ (k9\_int\_3\ X0))))\ (k1\_ec\_pf\_2\ X0))\Rightarrow(\forall X2. \\ (m2\_subset\_1\ X2\ (k3\_ec\_pf\_1\ (k9\_int\_3\ X0))\ (k6\_ec\_pf\_1\ X0\ (k2\_ec\_pf\_2 \\ X0\ X1)\ (k3\_ec\_pf\_2\ X0\ X1)))\Rightarrow(\forall X3.(m2\_subset\_1\ X3\ (k3\_ec\_pf\_1 \\ (k9\_int\_3\ X0))\ (k6\_ec\_pf\_1\ X0\ (k2\_ec\_pf\_2\ X0\ X1)\ (k3\_ec\_pf\_2\ X0 \\ X1))))\Rightarrow((r1\_ec\_pf\_1\ X0\ X2\ (k9\_ec\_pf\_2\ X0\ X1\ (k8\_ec\_pf\_2\ X0\ X1)\ X3))\Leftrightarrow \\ (r1\_ec\_pf\_1\ X0\ (k9\_ec\_pf\_2\ X0\ X1\ (k8\_ec\_pf\_2\ X0\ X1)\ X2)\ X3)))) \end{aligned}$$