

## t83\_intpro\_1

(TMX9dGHCqFTWx4yV1MjKqB4Jm4ZeAkS1jd3)

October 27, 2020

Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_intpro\_1 : \iota$  be given. Let  $k13\_intpro\_1 : \iota \Rightarrow \iota$  be given. Let  $k3\_intpro\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v10\_intpro\_1 : \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_intpro\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_intpro\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_intpro\_1 : \iota$  be given. Let  $k6\_intpro\_1 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. ((X0 \in X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 X2))) \Rightarrow (m1\_subset\_1 X0 X2) \quad (1)$$

Assume the following.

$$\forall X0. (m1\_subset\_1 X0 (k1\_zfmisc\_1 k1\_intpro\_1)) \Rightarrow (m1\_subset\_1 (k13\_intpro\_1 X0) (k1\_zfmisc\_1 k1\_intpro\_1)) \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. (m1\_subset\_1 X0 (k1\_zfmisc\_1 k1\_intpro\_1)) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 X1 (k1\_zfmisc\_1 k1\_intpro\_1)) \Rightarrow ((X1 = k13\_intpro\_1 \\ & X0) \Leftrightarrow (\forall X2. (m1\_subset\_1 X2 k1\_intpro\_1) \Rightarrow ((X2 \in X1) \Leftrightarrow (\forall X3. \\ & (m1\_subset\_1 X3 (k1\_zfmisc\_1 k1\_intpro\_1)) \Rightarrow (((v10\_intpro\_1 \\ & X3) \wedge (r1\_tarski X0 X3)) \Rightarrow (X2 \in X3))))))) \quad (3) \end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(m1\_subset\_1 X0 (k1\_zfmisc\_1 k1\_intpro\_1)) \Rightarrow ((v10\_intpro\_1 \\
& X0) \Leftrightarrow (\forall X1.(m1\_subset\_1 X1 k1\_intpro\_1) \Rightarrow (\forall X2.(m1\_subset\_1 \\
& X2 k1\_intpro\_1) \Rightarrow (\forall X3.(m1\_subset\_1 X3 k1\_intpro\_1) \Rightarrow (( \\
& k3\_intpro\_1 X1 (k3\_intpro\_1 X2 X1) \in X0) \wedge ((k3\_intpro\_1 (k3\_intpro\_1 \\
& X1 (k3\_intpro\_1 X2 X3)) (k3\_intpro\_1 (k3\_intpro\_1 X1 X2) (k3\_intpro\_1 \\
& X1 X3)) \in X0) \wedge ((k3\_intpro\_1 (k4\_intpro\_1 X1 X2) X1 \in X0) \wedge ((k3\_intpro\_1 \\
& (k4\_intpro\_1 X1 X2) X2 \in X0) \wedge ((k3\_intpro\_1 X1 (k3\_intpro\_1 X2 (k4\_intpro\_1 \\
& X1 X2)) \in X0) \wedge ((k3\_intpro\_1 X1 (k5\_intpro\_1 X1 X2) \in X0) \wedge ((k3\_intpro\_1 \\
& X2 (k5\_intpro\_1 X1 X2) \in X0) \wedge ((k3\_intpro\_1 (k3\_intpro\_1 X1 X3) ( \\
& k3\_intpro\_1 (k3\_intpro\_1 X2 X3) (k3\_intpro\_1 (k5\_intpro\_1 X1 X2) \\
& X3)) \in X0) \wedge ((k3\_intpro\_1 k2\_intpro\_1 X1 \in X0) \wedge ((k5\_intpro\_1 X1 \\
& (k3\_intpro\_1 X1 k2\_intpro\_1) \in X0) \wedge ((k3\_intpro\_1 (k6\_intpro\_1 \\
& (k3\_intpro\_1 X1 X2)) (k3\_intpro\_1 (k6\_intpro\_1 X1) (k6\_intpro\_1 \\
& X2)) \in X0) \wedge ((k3\_intpro\_1 (k6\_intpro\_1 X1) X1 \in X0) \wedge ((k3\_intpro\_1 \\
& (k6\_intpro\_1 X1) (k6\_intpro\_1 (k6\_intpro\_1 X1)) \in X0) \wedge (((X1 \in \\
& X0) \wedge (k3\_intpro\_1 X1 X2 \in X0)) \Rightarrow (X2 \in X0)) \wedge ((X1 \in X0) \Rightarrow (k6\_intpro\_1 \\
& X1 \in X0)))))))))))))))))
\end{aligned} \tag{4}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.(m1\_subset\_1 X0 (k1\_zfmisc\_1 k1\_intpro\_1)) \Rightarrow (\forall X1. \\
& (m1\_subset\_1 X1 k1\_intpro\_1) \Rightarrow (\forall X2.(m1\_subset\_1 X2 k1\_intpro\_1) \Rightarrow \\
& (((X1 \in k13\_intpro\_1 X0) \wedge (k3\_intpro\_1 X1 X2 \in k13\_intpro\_1 X0)) \Rightarrow \\
& (X2 \in k13\_intpro\_1 X0)))
\end{aligned}$$