

## t13\_ramsey\_1

(TMK5YegKxaNv84zoHNwUxqdXKoTPw8Uqdwq)

October 27, 2020

Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_eqrel\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k13\_eqrel\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.((\neg v1\_xboole\_0 X1) \wedge \\ & (m1\_eqrel\_1 X1 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 X0) \Rightarrow (\forall X3. \\ & (m2\_subset\_1 X3 (k1\_zfmisc\_1 X0) X1) \Rightarrow ((X2 \in X3) \Rightarrow (X3 = k3\_funct\_2 \\ & X0 X1 (k13\_eqrel\_1 X0 X1 X2)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v1\_xboole\_0 X0) \wedge ((\neg v1\_xboole\_0 X1) \wedge \\ & (m1\_eqrel\_1 X1 X0))) \Rightarrow ((v1\_funct\_1 (k13\_eqrel\_1 X0 X1)) \wedge ((v1\_funct\_2 \\ & (k13\_eqrel\_1 X0 X1) X0 X1) \wedge (m1\_subset\_1 (k13\_eqrel\_1 X0 X1) (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 X1)))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.((\neg v1\_xboole\_0 X1) \wedge \\ & (m1\_eqrel\_1 X1 X0)) \Rightarrow (\forall X2.((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 \\ & X2 X0 X1) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))))) \Rightarrow \\ & ((X2 = k13\_eqrel\_1 X0 X1) \Leftrightarrow (\forall X3.(m1\_subset\_1 X3 X0) \Rightarrow (X3 \in \\ & k3\_funct\_2 X0 X1 X2 X3)))))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.(m1\_eqrel\_1 X1 X0) \Rightarrow \\ & (\neg v1\_xboole\_0 X1)) \end{aligned} \tag{4}$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 X0) \Rightarrow \\ & (\forall X2.(m1\_subset\_1 X2 X0) \Rightarrow (\forall X3.(m1\_eqrel\_1 X3 X0) \Rightarrow \\ & (\forall X4.(m2\_subset\_1 X4 (k1\_zfmisc\_1 X0) X3) \Rightarrow (((X1 \in X4) \wedge ( \\ & k3\_funct\_2 X0 X3 (k13\_eqrel\_1 X0 X3) X1 = k3\_funct\_2 X0 X3 (k13\_eqrel\_1 \\ & X0 X3) X2)) \Rightarrow (X2 \in X4)))))) \end{aligned}$$