

t25\_sgraph1  
(TMaAU5Xu8hGn1DTLNDsrF1gdWwrMRb2F3md)

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Let  $r2\_sgraph1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_sgraph1 : \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_sgraph1 : \iota \Rightarrow \iota$  be given. Let  $g1\_sgraph1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_finset\_1 : \iota \Rightarrow o$  be given. Let  $k2\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Let  $k2\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k1\_subset\_1 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)) \Rightarrow (\forall X2. \\ & (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_sgraph1 X1))) \Rightarrow (\forall X3. \forall X4. \\ \neg (X3 \in X1) \wedge ((X4 \in X1) \wedge ((X3 \neq X4) \wedge ((g1\_sgraph1 X1 X2 \in k3\_sgraph1 X0) \wedge \\ & (\forall X5. ((v1\_finset\_1 X5) \wedge (m1\_subset\_1 X5 (k1\_zfmisc\_1 ( \\ & k2\_sgraph1 X1)))) \Rightarrow (\neg (X5 = k2\_xboole\_0 X2 (k1\_tarski (k2\_tarski \\ & X3 X4))) \wedge (g1\_sgraph1 X1 X5 \in k3\_sgraph1 X0)))))))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)) \Rightarrow (\forall X2. \\ & (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_sgraph1 X1))) \Rightarrow (\forall X3. \forall X4. \\ & ((v1\_finset\_1 X4) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_sgraph1 ( \\ & k2\_xboole\_0 X1 (k1\_tarski X3)))))) \Rightarrow (((g1\_sgraph1 X1 X2 \in k3\_sgraph1 \\ & X0) \wedge (X3 \in X0)) \Rightarrow (g1\_sgraph1 (k2\_xboole\_0 X1 (k1\_tarski X3)) X4 \in \\ & k3\_sgraph1 X0)))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0. g1\_sgraph1 k1\_xboole\_0 (k1\_subset\_1 (k2\_sgraph1 k1\_xboole\_0)) \in k3\_sgraph1 X0 \quad (3)$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. (r2\_sgraph1 X0 X1) \Leftrightarrow ((g1\_sgraph1 k1\_xboole\_0 \\
& (k1\_subset\_1 (k2\_sgraph1 k1\_xboole\_0)) \in X1) \wedge ((\forall X2. (m1\_subset\_1 \\
& X2 (k1\_zfmisc\_1 X0)) \Rightarrow (\forall X3. (m1\_subset\_1 X3 (k1\_zfmisc\_1 \\
& (k2\_sgraph1 X2))) \Rightarrow (\forall X4. \forall X5. ((v1\_finset\_1 X5) \wedge \\
& (m1\_subset\_1 X5 (k1\_zfmisc\_1 (k2\_sgraph1 (k2\_xboole\_0 X2 (k1\_tarski \\
& X4)))))) \Rightarrow (((g1\_sgraph1 X2 X3 \in X1) \wedge (X4 \in X0)) \Rightarrow ((X4 \in X2) \vee (g1\_sgraph1 \\
& (k2\_xboole\_0 X2 (k1\_tarski X4)) X5 \in X1)))))) \wedge (\forall X2. (m1\_subset\_1 \\
& X2 (k1\_zfmisc\_1 X0)) \Rightarrow (\forall X3. (m1\_subset\_1 X3 (k1\_zfmisc\_1 \\
& (k2\_sgraph1 X2))) \Rightarrow (\forall X4. \forall X5. \neg (g1\_sgraph1 X2 X3 \in \\
& X1) \wedge ((X4 \in X2) \wedge ((X5 \in X2) \wedge ((X4 \neq X5) \wedge ((\neg k2\_tarski X4 X5 \in X3) \wedge (\forall X6. \\
& ((v1\_finset\_1 X6) \wedge (m1\_subset\_1 X6 (k1\_zfmisc\_1 (k2\_sgraph1 X2)))) \Rightarrow \\
& (\neg (X6 = k2\_xboole\_0 X3 (k1\_tarski (k2\_tarski X4 X5))) \wedge (g1\_sgraph1 \\
& X2 X6 \in X1))))))))))
\end{aligned}$$

(4)

**Theorem 1**  $\forall X0. r2\_sgraph1 X0 (k3\_sgraph1 X0)$ .