

## t13\_zf\_fund1

(TMbmmsfhqFv6tH1RjVuV29wAxpK6G9swc6h)

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Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v1\_classes2 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $v8\_zf\_fund1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_finset\_1 : \iota \Rightarrow o$  be given. Let  $k2\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Let  $k3\_tarski : \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1\_xboole\_0 X0) \wedge (v1\_classes2 X0)) \Rightarrow (\forall X1. \\ & ((\neg v1\_xboole\_0 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0))) \Rightarrow (\forall X2. \\ & \forall X3.((v8\_zf\_fund1 X1 X0) \wedge ((X2 \in X1) \wedge (X3 \in X1))) \Rightarrow ((k2\_xboole\_0 \\ & X2 X3 \in X1) \wedge ((k6\_subset\_1 X2 X3 \in X1) \wedge (k3\_relat\_1 X2 X3 \in X1)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1\_xboole\_0 X0) \wedge (v1\_classes2 X0)) \Rightarrow (\forall X1. \\ & ((\neg v1\_xboole\_0 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0))) \Rightarrow ((v8\_zf\_fund1 \\ & X1 X0) \Rightarrow (k1\_xboole\_0 \in X1))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1\_xboole\_0 X0) \wedge (v1\_classes2 X0)) \Rightarrow (\forall X1. \\ & ((\neg v1\_xboole\_0 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0))) \Rightarrow (\forall X2. \\ & \forall X3.(v8\_zf\_fund1 X1 X0) \Rightarrow (((X2 \in X1) \Rightarrow (k1\_tarski X2 \in X1)) \wedge \\ & (((k1\_tarski X2 \in X1) \Rightarrow (X2 \in X1)) \wedge ((X3 \in X1) \Rightarrow (k3\_tarski X3 \in X1)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0 : \iota \Rightarrow o. \forall X1. ((v1\_finset\_1 X1) \wedge ((X0 k1\_xboole\_0) \wedge \\ & (\forall X2. \forall X3. ((X2 \in X1) \wedge ((r1\_tarski X3 X1) \wedge (X0 X3)))) \Rightarrow \\ & (X0 (k2\_xboole\_0 X3 (k1\_tarski X2)))))) \Rightarrow (X0 X1) \end{aligned} \quad (4)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v1\_xboole\_0 X0) \wedge (v1\_classes2 X0)) \Rightarrow (\forall X1. \\ & ((\neg v1\_xboole\_0 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0))) \Rightarrow (\forall X2. \\ & ((v8\_zf\_fund1 X1 X0) \wedge ((v1\_finset\_1 X2) \wedge (\forall X3.(X3 \in X2) \Rightarrow \\ & (X3 \in X1)))) \Rightarrow (X2 \in X1))) \end{aligned}$$