

# t1\_grcat\_1

(TMQByM29hp84exXH7hHWgTxv7HR5uh24Gm6)

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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  $k3\_xtuple\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_xtuple\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. ((\neg v1\_xboole\_0 X2) \wedge (v1\_classes2 X2)) \Rightarrow (((X0 \in X2) \wedge (X1 \in X2)) \Rightarrow ((k2\_tarski X0 X1 \in X2) \wedge (k4\_tarski X0 X1 \in X2))) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (m1\_subset\_1 X0 X1) \Rightarrow ((v1\_xboole\_0 X1) \vee (X0 \in X1)) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. \forall X3. k6\_xtuple\_0 X0 X1 X2 X3 = k4\_tarski (k3\_xtuple\_0 X0 X1 X2) X3 \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. k3\_xtuple\_0 X0 X1 X2 = k4\_tarski (k4\_tarski X0 X1) X2 \quad (4)$$

## Theorem 1

$$\forall X0. ((\neg v1\_xboole\_0 X0) \wedge (v1\_classes2 X0)) \Rightarrow (\forall X1. (m1\_subset\_1 X1 X0) \Rightarrow (\forall X2. (m1\_subset\_1 X2 X0) \Rightarrow (\forall X3. (m1\_subset\_1 X3 X0) \Rightarrow (\forall X4. (m1\_subset\_1 X4 X0) \Rightarrow ((k3\_xtuple\_0 X1 X2 X3 \in X0) \wedge (k6\_xtuple\_0 X1 X2 X3 X4 \in X0)))))))$$