

# t37\_sysrel (TMMYkfqDZqWndsQXb- VwHXC3uCRhG32HPW2c)

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Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $k3\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_relat\_1 : \iota \Rightarrow \iota$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k1\_sysrel : \iota \Rightarrow \iota$  be given. Let  $k4\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k10\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. k4\_xboole\_0 X0 (k3\_xboole\_0 X0 X1) = k4\_xboole\_0 X0 X1 \quad (1)$$

Assume the following.

$$\forall X0. (r1\_tarski X0 k1\_xboole\_0) \Rightarrow (X0 = k1\_xboole\_0) \quad (2)$$

Assume the following.

$$\forall X0. (v1\_relat\_1 X0) \Rightarrow ((r1\_tarski (k4\_relat\_1 (k9\_xtuple\_0 (k1\_sysrel X0))) X0) \wedge (r1\_tarski (k4\_relat\_1 (k10\_xtuple\_0 (k1\_sysrel X0))) X0)) \quad (3)$$

Assume the following.

$$\forall X0. (v1\_relat\_1 X0) \Rightarrow (\forall X1. (v1\_relat\_1 X1) \Rightarrow (\forall X2. (v1\_relat\_1 X2) \Rightarrow ((r1\_tarski X0 X1) \Rightarrow (r1\_tarski (k3\_relat\_1 X0 X2) (k3\_relat\_1 X1 X2)))))) \quad (4)$$

Assume the following.

$$\forall X0. (v1\_relat\_1 X0) \Rightarrow (\forall X1. (v1\_relat\_1 X1) \Rightarrow (\forall X2. (v1\_relat\_1 X2) \Rightarrow ((r1\_tarski X0 X1) \Rightarrow (r1\_tarski (k3\_relat\_1 X2 X0) (k3\_relat\_1 X2 X1)))))) \quad (5)$$

Assume the following.

$$\forall X0. (v1\_relat\_1 X0) \Rightarrow (k1\_sysrel X0 = k4\_relat\_1 (k9\_xtuple\_0 (k1\_sysrel X0))) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.k6\_subset\_1 X0 X1 = k4\_xboole\_0 X0 X1 \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.(v1\_relat\_1 X0)\Rightarrow(v1\_relat\_1 (k4\_xboole\_0 X0 X1)) \quad (8)$$

Assume the following.

$$\forall X0.v1\_relat\_1 (k4\_relat\_1 X0) \quad (9)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 X0)\Rightarrow(k1\_sysrel X0 = k3\_xboole\_0 X0 (k4\_relat\_1 (k9\_xtuple\_0 X0))) \quad (10)$$

**Theorem 1**

$$\begin{aligned} \forall X0.(v1\_relat\_1 X0)\Rightarrow(&((k3\_relat\_1 X0 (k6\_subset\_1 X0 ( \\ &k4\_relat\_1 (k9\_xtuple\_0 X0))) = k1\_xboole\_0)\Rightarrow(k3\_relat\_1 (k4\_relat\_1 \\ &(k9\_xtuple\_0 (k1\_sysrel X0))) (k6\_subset\_1 X0 (k4\_relat\_1 (k9\_xtuple\_0 \\ &(k1\_sysrel X0)))) = k1\_xboole\_0)\wedge((k3\_relat\_1 (k6\_subset\_1 \\ &X0 (k4\_relat\_1 (k9\_xtuple\_0 X0))) X0 = k1\_xboole\_0)\Rightarrow(k3\_relat\_1 \\ &(k6\_subset\_1 X0 (k4\_relat\_1 (k9\_xtuple\_0 (k1\_sysrel X0)))) (k4\_relat\_1 \\ &(k9\_xtuple\_0 (k1\_sysrel X0))) = k1\_xboole\_0))) \end{aligned}$$