

# l33\_rewrite1

(TMPJovUXTnHmnHs59tbiGfQatimdgEgMoiy)

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Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $r2\_rewrite1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_rewrite1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_relat\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0.(v1\_relat\_1 X0) \Rightarrow (\forall X1.\forall X2.(r1\_rewrite1 X0 X1 X2) \Rightarrow (r1\_rewrite1 (k2\_relat\_1 X0) X2 X1)) \quad (1)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 X0) \Rightarrow (\forall X1.(v1\_relat\_1 X1) \Rightarrow (k2\_relat\_1 (k2\_xboole\_0 X0 X1) = k2\_xboole\_0 (k2\_relat\_1 X0) (k2\_relat\_1 X1))) \quad (2)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 X0) \Rightarrow (k2\_relat\_1 (k2\_relat\_1 X0) = X0) \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1 X0) \wedge (v1\_relat\_1 X1)) \Rightarrow (v1\_relat\_1 (k2\_xboole\_0 X0 X1)) \quad (4)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 X0) \Rightarrow (v1\_relat\_1 (k2\_relat\_1 X0)) \quad (5)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 X0) \Rightarrow (\forall X1.\forall X2.(r2\_rewrite1 X0 X1 X2) \Leftrightarrow (r1\_rewrite1 (k2\_xboole\_0 X0 (k2\_relat\_1 X0)) X1 X2)) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.k2\_xboole\_0 X0 X1 = k2\_xboole\_0 X1 X0 \quad (7)$$

**Theorem 1**

$$\forall X0.(v1\_relat\_1 X0) \Rightarrow (\forall X1.\forall X2.(r2\_rewrite1 X0 X1 X2) \Rightarrow (r2\_rewrite1 X0 X2 X1))$$