

# t54\_rewrite1 (TMKBdoeUDMN- qSNL9kCuP2qu7AvxsQSus4vL)

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Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v2\_rewrite1 : \iota \Rightarrow o$  be given. Let  $v4\_rewrite1 : \iota \Rightarrow o$  be given. Let  $r4\_rewrite1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_rewrite1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_relat\_1 : \iota \Rightarrow \iota$  be given. Let  $r9\_rewrite1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge (v4\_rewrite1 X0)) \Rightarrow (\forall X1. \forall X2. \\ \forall X3.((r4\_rewrite1 X0 X1 X2) \wedge (r4\_rewrite1 X0 X1 X3)) \Rightarrow (X2 = X3)) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 X0) \Rightarrow (\forall X1.(\neg X1 \in k1\_relat\_1 X0) \Rightarrow (r9\_rewrite1 X0 X1)) \quad (2)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 X0) \Rightarrow ((v2\_rewrite1 X0) \Leftrightarrow (\forall X1.(X1 \in k1\_relat\_1 X0) \Rightarrow (r9\_rewrite1 X0 X1))) \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1\_relat\_1 X0) \Rightarrow (\forall X1.((r9\_rewrite1 X0 X1) \wedge \\ (\forall X2. \forall X3.((r4\_rewrite1 X0 X1 X2) \wedge (r4\_rewrite1 X0 \\ X1 X3)) \Rightarrow (X2 = X3))) \Rightarrow (\forall X2.(X2 = k2\_rewrite1 X0 X1) \Leftrightarrow (r4\_rewrite1 \\ X0 X1 X2))) \end{aligned} \quad (4)$$

## Theorem 1

$$\forall X0.((v1\_relat\_1 X0) \wedge ((v2\_rewrite1 X0) \wedge (v4\_rewrite1 X0))) \Rightarrow (\forall X1.r4\_rewrite1 X0 X1 (k2\_rewrite1 X0 X1))$$