

# l36\_xreal\_1

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Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xcmplx\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.(v1\_xcmplx\_0 X0) \Rightarrow (\forall X1.(v1\_xcmplx\_0 X1) \Rightarrow (\forall X2. \\ & (v1\_xcmplx\_0 X2) \Rightarrow (k6\_xcmplx\_0 (k2\_xcmplx\_0 X0 X1) X2 = k2\_xcmplx\_0 \\ & (k6\_xcmplx\_0 X0 X2) X1))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1\_xreal\_0 X0) \Rightarrow (\forall X1.(v1\_xreal\_0 X1) \Rightarrow (\forall X2. \\ & (v1\_xreal\_0 X2) \Rightarrow ((r1\_xxreal\_0 X0 (k2\_xcmplx\_0 X1 X2)) \Rightarrow (r1\_xxreal\_0 \\ & (k6\_xcmplx\_0 X0 X1) X2)))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1\_xreal\_0 X0) \Rightarrow (\forall X1.(v1\_xreal\_0 X1) \Rightarrow (\forall X2. \\ & (v1\_xreal\_0 X2) \Rightarrow ((r1\_xxreal\_0 (k2\_xcmplx\_0 X0 X1) X2) \Rightarrow (r1\_xxreal\_0 \\ & X0 (k6\_xcmplx\_0 X2 X1)))))) \end{aligned} \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xreal\_0 X0) \wedge (v1\_xreal\_0 X1)) \Rightarrow (v1\_xreal\_0 (k6\_xcmplx\_0 X0 X1)) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xreal\_0 X0) \wedge (v1\_xreal\_0 X1)) \Rightarrow (v1\_xreal\_0 (k2\_xcmplx\_0 X0 X1)) \tag{5}$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (v1\_xcmplx\_0 X0) \tag{6}$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(v1\_xreal\_0 X0) \Rightarrow (\forall X1.(v1\_xreal\_0 X1) \Rightarrow (\forall X2. \\ & (v1\_xreal\_0 X2) \Rightarrow (\forall X3.(v1\_xreal\_0 X3) \Rightarrow ((r1\_xxreal\_0 ( \\ & k2\_xcmplx\_0 X0 X1) (k2\_xcmplx\_0 X2 X3)) \Rightarrow (r1\_xxreal\_0 (k6\_xcmplx\_0 \\ & X0 X2) (k6\_xcmplx\_0 X3 X1)))))) \end{aligned}$$