

## l1\_prob\_3

(TMdt7pPjY87Xv73TL1LQRHXVw9ByirFHWu1)

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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  $k6\_numbers : \iota$  be given. Let  $k9\_binop\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k10\_binop\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0.(v1\_xreal\_0 X0) \Rightarrow (\forall X1.(v1\_xreal\_0 X1) \Rightarrow (\forall X2. \\ & (v1\_xreal\_0 X2) \Rightarrow (\neg(\neg r1\_xxreal\_0 X0 k6\_numbers) \wedge ((r1\_xxreal\_0 \\ & X1 X2) \wedge (r1\_xxreal\_0 X2 (k6\_xcmplx\_0 X1 X0)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xreal\_0 X0) \wedge (v1\_xreal\_0 X1)) \Rightarrow (k9\_binop\_2 X0 X1 = k2\_xcmplx\_0 X0 X1) \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xreal\_0 X0) \wedge (v1\_xreal\_0 X1)) \Rightarrow (k10\_binop\_2 X0 X1 = k6\_xcmplx\_0 X0 X1) \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1\_xreal\_0 X0) \Rightarrow (\forall X1.(v1\_xreal\_0 X1) \Rightarrow (\forall X2. \\ & (v1\_xreal\_0 X2) \Rightarrow ((r1\_xxreal\_0 X0 X1) \Rightarrow ((r1\_xxreal\_0 X2 k6\_numbers) \vee \\ & ((\neg r1\_xxreal\_0 (k2\_xcmplx\_0 X1 X2) X0) \wedge (\neg r1\_xxreal\_0 X1 (k6\_xcmplx\_0 \\ & X0 X2)))))) \end{aligned} \quad (4)$$

### Theorem 1

$$\begin{aligned} & \forall X0.(v1\_xreal\_0 X0) \Rightarrow (\forall X1.(v1\_xreal\_0 X1) \Rightarrow (\forall X2. \\ & (v1\_xreal\_0 X2) \Rightarrow ((r1\_xxreal\_0 X0 X1) \Rightarrow ((r1\_xxreal\_0 X2 k6\_numbers) \vee \\ & ((\neg r1\_xxreal\_0 (k9\_binop\_2 X1 X2) X0) \wedge (\neg r1\_xxreal\_0 X1 (k10\_binop\_2 \\ & X0 X2)))))) \end{aligned}$$