

# l4\_integr19

## (TMVUumpLoNqkgVZRJevyz1DGfo1trwR14z2)

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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  $k3\_integra5 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $k1\_xxreal\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_rcomp\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0.(v1\_xreal\_0 X0) \Rightarrow (\forall X1.(v1\_xxreal\_0 X1) \Rightarrow (\forall X2. \\ & (v1\_xxreal\_0 X2) \Rightarrow ((X0 \in k1\_xxreal\_1 X1 X2) \Leftrightarrow ((r1\_xxreal\_0 X1 X0) \wedge \\ & (r1\_xxreal\_0 X0 X2)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((r1\_tarski X0 X1) \wedge (r1\_tarski X1 X2)) \Rightarrow (r1\_tarski X0 X2) \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1\_xreal\_0 X0) \Rightarrow (\forall X1.(v1\_xreal\_0 X1) \Rightarrow (\forall X2. \\ & (v1\_xreal\_0 X2) \Rightarrow ((r1\_xxreal\_0 X0 X1) \wedge (r1\_xxreal\_0 X1 X2)) \Rightarrow ( \\ & (X1 \in k3\_integra5 X0 X2) \wedge ((r1\_tarski (k3\_integra5 X0 X1) (k3\_integra5 \\ & X0 X2)) \wedge (r1\_tarski (k3\_integra5 X1 X2) (k3\_integra5 X0 X2)))))) \end{aligned} \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xreal\_0 X0) \wedge (v1\_xreal\_0 X1)) \Rightarrow (k1\_rcomp\_1 X0 X1 = k1\_xxreal\_1 X0 X1) \tag{4}$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1\_xxreal\_0 X0) \Rightarrow (\forall X1.(v1\_xxreal\_0 X1) \Rightarrow (( \\ & (r1\_xxreal\_0 X0 X1) \Rightarrow (k3\_xxreal\_0 X0 X1 = X0)) \wedge ((\neg r1\_xxreal\_0 X0 \\ & X1) \Rightarrow (k3\_xxreal\_0 X0 X1 = X1)))) \end{aligned} \tag{5}$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (\forall X1.(v1\_xreal\_0 X1) \Rightarrow ((r1\_xxreal\_0 X0 X1) \Rightarrow (k3\_integra5 X0 X1 = k1\_rcomp\_1 X0 X1))) \tag{6}$$

Assume the following.

$$\forall X0.(v1\_xxreal\_0 X0) \Rightarrow (\forall X1.(v1\_xxreal\_0 X1) \Rightarrow ((r1\_xxreal\_0 X1 X0) \Rightarrow (k4\_xxreal\_0 X0 X1 = X0)) \wedge ((\neg r1\_xxreal\_0 X1 X0) \Rightarrow (k4\_xxreal\_0 X0 X1 = X1)))) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xxreal\_0 X0) \wedge (v1\_xxreal\_0 X1)) \Rightarrow ((r1\_xxreal\_0 X0 X1) \vee (r1\_xxreal\_0 X1 X0)) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xxreal\_0 X0) \wedge (v1\_xxreal\_0 X1)) \Rightarrow (k4\_xxreal\_0 X0 X1 = k4\_xxreal\_0 X1 X0) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xxreal\_0 X0) \wedge (v1\_xxreal\_0 X1)) \Rightarrow (k3\_xxreal\_0 X0 X1 = k3\_xxreal\_0 X1 X0) \quad (10)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (v1\_xxreal\_0 X0) \quad (11)$$

**Theorem 1**

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (\forall X1.(v1\_xreal\_0 X1) \Rightarrow (\forall X2.(v1\_xreal\_0 X2) \Rightarrow (\forall X3.(v1\_xreal\_0 X3) \Rightarrow (((r1\_xxreal\_0 X0 X1) \wedge ((X2 \in k3\_integra5 X0 X1) \wedge (X3 \in k3\_integra5 X0 X1))) \Rightarrow (r1\_tarSKI (k3\_integra5 (k3\_xxreal\_0 X2 X3) (k4\_xxreal\_0 X2 X3)) (k3\_integra5 X0 X1)))))))$$