

# l29\_topgen\_5

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Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k3\_topgen\_5 : \iota$  be given. Let  $k2\_topgen\_5 : \iota$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v1\_pre\_topc : \iota \Rightarrow o$  be given. Let  $v2\_pre\_topc : \iota \Rightarrow o$  be given. Let  $l1\_pre\_topc : \iota \Rightarrow o$  be given. Let  $m1\_topgen\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k19\_euclid : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k4\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k15\_euclid : \iota \Rightarrow \iota$  be given. Let  $np\_2 : \iota$  be given. Let  $k1\_topreal9 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_domain\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k9\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$(\neg v2\_struct\_0\ k3\_topgen\_5) \wedge ((v1\_pre\_topc\ k3\_topgen\_5) \wedge ((v2\_pre\_topc\ k3\_topgen\_5) \wedge (l1\_pre\_topc\ k3\_topgen\_5))) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0\ X0) \wedge ((v1\_pre\_topc\ X0) \wedge ((v2\_pre\_topc\ X0) \wedge (l1\_pre\_topc\ X0)))) \Rightarrow ((X0 = k3\_topgen\_5) \Leftrightarrow ((u1\_struct\_0\ X0 = \\ & \quad k2\_topgen\_5) \wedge (\exists X1. (m1\_topgen\_2\ X1\ X0) \wedge ((\forall X2. ( \\ & \quad m1\_subset\_1\ X2\ k1\_numbers) \Rightarrow (k1\_funct\_1\ X1\ (k19\_euclid\ X2\ k6\_numbers) = \\ & \quad ReplSep\ (toset\ (\lambda X3 : \iota. m1\_subset\_1\ X3\ k1\_numbers))\ (\lambda X3 : \\ & \quad \iota. \neg r1\_xxreal\_0\ X3\ k6\_numbers)\ (\lambda X3 : \iota. k4\_subset\_1\ (u1\_struct\_0 \\ & \quad (k15\_euclid\ np\_2))\ (k1\_topreal9\ np\_2\ (k19\_euclid\ X2\ X3)\ X3)\ ( \\ & \quad k6\_domain\_1\ (u1\_struct\_0\ (k15\_euclid\ np\_2))\ (k19\_euclid\ X2\ k6\_numbers)))))) \wedge \\ & \quad (\forall X2. (m1\_subset\_1\ X2\ k1\_numbers) \Rightarrow (\forall X3. (m1\_subset\_1 \\ & \quad X3\ k1\_numbers) \Rightarrow ((\neg r1\_xxreal\_0\ X3\ k6\_numbers) \Rightarrow (k1\_funct\_1\ X1 \\ & \quad (k19\_euclid\ X2\ X3) = ReplSep\ (toset\ (\lambda X4 : \iota. m1\_subset\_1\ X4 \\ & \quad k1\_numbers))\ (\lambda X4 : \iota. \neg r1\_xxreal\_0\ X4\ k6\_numbers)\ (\lambda X4 : \\ & \quad \iota. k9\_subset\_1\ (u1\_struct\_0\ (k15\_euclid\ np\_2))\ (k1\_topreal9 \\ & \quad np\_2\ (k19\_euclid\ X2\ X3)\ X4)\ k2\_topgen\_5))))))))) \end{aligned} \quad (2)$$

**Theorem 1**  $u1\_struct\_0\ k3\_topgen\_5 = k2\_topgen\_5$ .