l16_topgen_3 (TMPpF9XibsXrHLXDeT9zZrJNqw4FRC7eMj1)

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Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $k1\_numbers : \iota$ be given. Let $u1\_pre\_topc : \iota \Rightarrow \iota$ be given. Let $k2\_topgen\_3 : \iota$ be given. Let $k1\_cantor\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_rcomp\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1\_rat\_1 : \iota \Rightarrow o$ 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 $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Assume the following.

$$(\neg v2\_struct\_0\ k2\_topgen\_3) \wedge ((v1\_pre\_topc\ k2\_topgen\_3) \wedge ((v2\_pre\_topc\ k2\_topgen\_3) \wedge (l1\_pre\_topc\ k2\_topgen\_3))) \tag{1}$$

Assume the following.

$$\begin{gathered}\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v1\_pre\_topc\ X0) \wedge ((v2\_pre\_topc\ X0) \wedge (l1\_pre\_topc\ X0)))) \Rightarrow ((X0 = k2\_topgen\_3) \Leftrightarrow ((u1\_struct\_0\ X0 = k1\_numbers) \wedge (\exists X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k1\_zfmisc\_1\ k1\_numbers))) \wedge ((u1\_pre\_topc\ X0 = k1\_cantor\_1\ k1\_numbers\ X1) \wedge \\ (X1 = ReplSep2\ (toset\ (\lambda X2 : \iota.m1\_subset\_1\ X2\ k1\_numbers))\ (\lambda X2 : \iota.toset\ (\lambda X3 : \iota.m1\_subset\_1\ X3\ k1\_numbers))\ (\\ \lambda X2 : \iota.\lambda X3 : \iota.(\neg r1\_xxreal\_0\ X3\ X2) \wedge (v1\_rat\_1\ X3))\ (\\ \lambda X2 : \iota.\lambda X3 : \iota.k3\_rcomp\_1\ X2\ X3))))))\end{gathered} \tag{2}$$

Theorem 1

$$\begin{gathered}\exists X0.(m1\_subset\_1\ X0\ (k1\_zfmisc\_1\ (k1\_zfmisc\_1\ k1\_numbers))) \wedge \\ ((u1\_pre\_topc\ k2\_topgen\_3 = k1\_cantor\_1\ k1\_numbers\ X0) \wedge (X0 = ReplSep2 \\ (toset\ (\lambda X1 : \iota.m1\_subset\_1\ X1\ k1\_numbers))\ (\lambda X1 : \iota. \\ toset\ (\lambda X2 : \iota.m1\_subset\_1\ X2\ k1\_numbers))\ (\lambda X1 : \iota.\lambda X2 : \\ \iota.(\neg r1\_xxreal\_0\ X2\ X1) \wedge (v1\_rat\_1\ X2))\ (\lambda X1 : \iota.\lambda X2 : \\ \iota.k3\_rcomp\_1\ X1\ X2)))\end{gathered}$$