t44_twoscomp (TMTU488NEbAQjb9up6FPzLseAJ1HeMjzksT)

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Let $v1\_xtuple\_0 : \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4\_card\_3 : \iota \Rightarrow \iota$ be given. Let $u3\_msualg\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k34\_twoscomp : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k35\_twoscomp : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6\_margrel1 : \iota$ be given. Let $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6\_circuit2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k36\_twoscomp : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_binarith : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9\_margrel1 : \iota \Rightarrow \iota$ be given. Let $k15\_twoscomp : \iota$ be given. Let $k10\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np\_\_2 : \iota$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.(\neg v1\_xtuple\_0\ X0) \Rightarrow (\forall X1.(\neg v1\_xtuple\_0\ X1) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (k4\_card\_3\ (u3\_msualg\_1\ (k34\_twoscomp\ X0\ X1)\ (k35\_twoscomp\ X0\ X1)))) \Rightarrow ((k1\_funct\_1\ (k6\_circuit2\ (k34\_twoscomp\ X0\ X1)\ (k35\_twoscomp\ X0\ X1)\ X2)\ (k36\_twoscomp\ X0\ X1) = k1\_funct\_1\ k15\_twoscomp\ (k10\_finseq\_1\ (k1\_funct\_1\ X2\ X0)\ (k1\_funct\_1\ X2\ X1))) \wedge ((k1\_funct\_1\ (k6\_circuit2\ (k34\_twoscomp\ X0\ X1)\ (k35\_twoscomp\ X0\ X1)\ X2)\ X0 = k1\_funct\_1\ X2\ X0) \wedge (k1\_funct\_1\ (k6\_circuit2\ (k34\_twoscomp\ X0\ X1)\ (k35\_twoscomp\ X0\ X1)\ X2)\ X1 = k1\_funct\_1\ X2\ X1)))))) \tag{1}$$

Assume the following.

$$(v1\_funct\_1\ k15\_twoscomp) \wedge ((v1\_funct\_2\ k15\_twoscomp\ (k4\_finseq\_2\ np\_\_2\ k6\_margrel1)\ k6\_margrel1) \wedge (m1\_subset\_1\ k15\_twoscomp\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k4\_finseq\_2\ np\_\_2\ k6\_margrel1)\ k6\_margrel1)))) \tag{2}$$

Assume the following.

$$\forall X0.((v1\_funct\_1\ X0) \wedge ((v1\_funct\_2\ X0\ (k4\_finseq\_2\ np\_\_2\ k6\_margrel1)\ k6\_margrel1) \wedge (m1\_subset\_1\ X0\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k4\_finseq\_2\ np\_\_2\ k6\_margrel1)\ k6\_margrel1))))) \Rightarrow ((X0 = k15\_twoscomp) \Leftrightarrow (\forall X1.(m1\_subset\_1\ X1\ k6\_margrel1) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ k6\_margrel1) \Rightarrow (k1\_funct\_1\ X0\ (k10\_finseq\_1\ X1\ X2) = k2\_binarith\ (k9\_margrel1\ X1)\ X2)))) \tag{3}$$

Theorem 1

$$\forall X0.(\neg v1\_xtuple\_0\ X0)\Rightarrow(\forall X1.(\neg v1\_xtuple\_0\ X1)\Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (k4\_card\_3\ (u3\_msualg\_1\ (k34\_twoscomp\ X0\ X1)\ (k35\_twoscomp\ X0\ X1))))\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ k6\_margrel1)\Rightarrow (\forall X4.(m1\_subset\_1\ X4\ k6\_margrel1)\Rightarrow(((X3 = k1\_funct\_1\ X2\ X0)\wedge(X4 = k1\_funct\_1\ X2\ X1))\Rightarrow((k1\_funct\_1\ (k6\_circuit2\ (k34\_twoscomp\ X0\ X1)\ (k35\_twoscomp\ X0\ X1)\ X2)\ (k36\_twoscomp\ X0\ X1) = k2\_binarith\ (k9\_margrel1\ X3)\ X4)\wedge((k1\_funct\_1\ (k6\_circuit2\ (k34\_twoscomp\ X0\ X1)\ (k35\_twoscomp\ X0\ X1)\ X2)\ X0 = X3)\wedge(k1\_funct\_1\ (k6\_circuit2\ (k34\_twoscomp\ X0\ X1)\ (k35\_twoscomp\ X0\ X1)\ X2)\ X1 = X4)))))))$$