t30_rmod_3 (TMXeMTf9qVnbsqwK3i8tHkDBoYY6nk77A93)

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Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $v13\_algstr\_0 : \iota \Rightarrow o$ be given. Let $v3\_group\_1 : \iota \Rightarrow o$ be given. Let $v4\_vectsp\_1 : \iota \Rightarrow o$ be given. Let $v5\_vectsp\_1 : \iota \Rightarrow o$ be given. Let $v2\_rlvect\_1 : \iota \Rightarrow o$ be given. Let $v3\_rlvect\_1 : \iota \Rightarrow o$ be given. Let $v4\_rlvect\_1 : \iota \Rightarrow o$ be given. Let $l6\_algstr\_0 : \iota \Rightarrow o$ be given. Let $v4\_vectsp\_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1\_vectsp\_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1\_rmod\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_rmod\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_rmod\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2\_vectsp\_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v13\_algstr\_0\ X0) \wedge ((v3\_group\_1\ X0) \wedge ((v4\_vectsp\_1\ X0) \wedge ((v5\_vectsp\_1\ X0) \wedge ((v2\_rlvect\_1\ X0) \wedge ((v3\_rlvect\_1\ X0) \wedge ((v4\_rlvect\_1\ X0) \wedge (l6\_algstr\_0\ X0))))))))) \Rightarrow (\forall X1.((\neg v2\_struct\_0\ X1) \wedge ((v13\_algstr\_0\ X1) \wedge ((v2\_rlvect\_1\ X1) \wedge ((v3\_rlvect\_1\ X1) \wedge ((v4\_rlvect\_1\ X1) \wedge ((v4\_vectsp\_2\ X1\ X0) \wedge (l1\_vectsp\_2\ X1\ X0))))))) \Rightarrow (\forall X2.((v2\_vectsp\_2\ X2\ X0) \wedge (m1\_rmod\_2\ X2\ X0\ X1)) \Rightarrow (\forall X3.((v2\_vectsp\_2\ X3\ X0) \wedge (m1\_rmod\_2\ X3\ X0\ X1)) \Rightarrow ((u1\_struct\_0\ X2 = u1\_struct\_0\ X3) \Rightarrow (X2 = X3))))) \tag{1}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v13\_algstr\_0\ X0) \wedge ((v3\_group\_1\ X0) \wedge ((v4\_vectsp\_1\ X0) \wedge ((v5\_vectsp\_1\ X0) \wedge ((v2\_rlvect\_1\ X0) \wedge ((v3\_rlvect\_1\ X0) \wedge ((v4\_rlvect\_1\ X0) \wedge (l6\_algstr\_0\ X0))))))))) \Rightarrow (\forall X1.((\neg v2\_struct\_0\ X1) \wedge ((v13\_algstr\_0\ X1) \wedge ((v2\_rlvect\_1\ X1) \wedge ((v3\_rlvect\_1\ X1) \wedge ((v4\_rlvect\_1\ X1) \wedge ((v4\_vectsp\_2\ X1\ X0) \wedge (l1\_vectsp\_2\ X1\ X0))))))) \Rightarrow (\forall X2.(m1\_rmod\_2\ X2\ X0\ X1) \Rightarrow (\forall X3.(m1\_rmod\_2\ X3\ X0\ X1) \Rightarrow (\forall X4.(m1\_rmod\_2\ X4\ X0\ X1) \Rightarrow ((m1\_rmod\_2\ X2\ X0\ X3) \Rightarrow (u1\_struct\_0\ (k1\_rmod\_3\ X0\ X1\ X3\ (k2\_rmod\_3\ X0\ X1\ X2\ X4)) = u1\_struct\_0\ (k2\_rmod\_3\ X0\ X1\ (k1\_rmod\_3\ X0\ X1\ X2\ X3)\ (k1\_rmod\_3\ X0\ X1\ X3\ X4)))))))) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(((\neg v2\_struct\_0\ X0)\wedge((v13\_algstr\_0\ X0)\wedge((v3\_group\_1\ X0)\wedge((v4\_vectsp\_1\ X0)\wedge((v5\_vectsp\_1\ X0)\wedge((v2\_rlvect\_1\ X0)\wedge((v3\_rlvect\_1\ X0)\wedge((v4\_rlvect\_1\ X0)\wedge(l6\_algstr\_0\ X0)))))))))\wedge(((\neg v2\_struct\_0\ X1)\wedge((v13\_algstr\_0\ X1)\wedge((v2\_rlvect\_1\ X1)\wedge((v3\_rlvect\_1\ X1)\wedge((v4\_rlvect\_1\ X1)\wedge((v4\_vectsp\_2\ X1\ X0)\wedge(l1\_vectsp\_2\ X1\ X0)))))))\wedge((m1\_rmod\_2\ X2\ X0\ X1)\wedge(m1\_rmod\_2\ X3\ X0\ X1))))\Rightarrow((v2\_vectsp\_2\ (k2\_rmod\_3\ X0\ X1\ X2\ X3)\ X0)\wedge(m1\_rmod\_2\ (k2\_rmod\_3\ X0\ X1\ X2\ X3)\ X0\ X1)) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(((\neg v2\_struct\_0\ X0)\wedge((v13\_algstr\_0\ X0)\wedge((v3\_group\_1\ X0)\wedge((v4\_vectsp\_1\ X0)\wedge((v5\_vectsp\_1\ X0)\wedge((v2\_rlvect\_1\ X0)\wedge((v3\_rlvect\_1\ X0)\wedge((v4\_rlvect\_1\ X0)\wedge(l6\_algstr\_0\ X0)))))))))\wedge(((\neg v2\_struct\_0\ X1)\wedge((v13\_algstr\_0\ X1)\wedge((v2\_rlvect\_1\ X1)\wedge((v3\_rlvect\_1\ X1)\wedge((v4\_rlvect\_1\ X1)\wedge((v4\_vectsp\_2\ X1\ X0)\wedge(l1\_vectsp\_2\ X1\ X0)))))))\wedge((m1\_rmod\_2\ X2\ X0\ X1)\wedge(m1\_rmod\_2\ X3\ X0\ X1))))\Rightarrow((v2\_vectsp\_2\ (k1\_rmod\_3\ X0\ X1\ X2\ X3)\ X0)\wedge(m1\_rmod\_2\ (k1\_rmod\_3\ X0\ X1\ X2\ X3)\ X0\ X1)) \tag{4}$$

Theorem 1

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v13\_algstr\_0\ X0)\wedge((v3\_group\_1\ X0)\wedge((v4\_vectsp\_1\ X0)\wedge((v5\_vectsp\_1\ X0)\wedge((v2\_rlvect\_1\ X0)\wedge((v3\_rlvect\_1\ X0)\wedge((v4\_rlvect\_1\ X0)\wedge(l6\_algstr\_0\ X0)))))))))\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((v13\_algstr\_0\ X1)\wedge((v2\_rlvect\_1\ X1)\wedge((v3\_rlvect\_1\ X1)\wedge((v4\_rlvect\_1\ X1)\wedge((v4\_vectsp\_2\ X1\ X0)\wedge(l1\_vectsp\_2\ X1\ X0)))))))\Rightarrow(\forall X2.(m1\_rmod\_2\ X2\ X0\ X1)\Rightarrow(\forall X3.(m1\_rmod\_2\ X3\ X0\ X1)\Rightarrow(\forall X4.(m1\_rmod\_2\ X4\ X0\ X1)\Rightarrow((m1\_rmod\_2\ X2\ X0\ X3)\Rightarrow(k1\_rmod\_3\ X0\ X1\ X3\ (k2\_rmod\_3\ X0\ X1\ X2\ X4) = k2\_rmod\_3\ X0\ X1\ (k1\_rmod\_3\ X0\ X1\ X2\ X3)\ (k1\_rmod\_3\ X0\ X1\ X3\ X4)))))))$$