

# t35\_compos\_2 (TMW- paC3hor8ueHMDrUL8ZcWTyFMQihebNrj)

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Let  $v1\_amistd\_4 : \iota \Rightarrow o$  be given. Let  $l1\_compos\_1 : \iota \Rightarrow o$  be given. Let  $v6\_compos\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_compos\_1 : \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k62\_valued\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_compos\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_compos\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_6 : \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_finset\_1 : \iota \Rightarrow o$  be given. Let  $v1\_afinsq\_1 : \iota \Rightarrow o$  be given. Let  $v3\_compos\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v4\_compos\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_card\_1 : \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $np\_7 : \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((v1\_amistd\_4 X0) \wedge (l1\_compos\_1 X0)) \Rightarrow (\forall X1. \\ & ((\neg v1\_xboole\_0 X1) \wedge ((v1\_relat\_1 X1) \wedge ((v4\_relat\_1 X1 k5\_numbers) \wedge \\ & ((v5\_relat\_1 X1 (u1\_compos\_1 X0)) \wedge ((v1\_funct\_1 X1) \wedge ((v1\_finset\_1 \\ & X1) \wedge ((v1\_afinsq\_1 X1) \wedge ((v3\_compos\_1 X1 X0) \wedge (v4\_compos\_1 X1 X0)))))))))) \Rightarrow \\ & (k62\_valued\_1 X1 = k6\_xcmplx\_0 (k5\_card\_1 X1) np\_1)) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_amistd\_4 X0) \wedge (l1\_compos\_1 X0)) \Rightarrow (\forall X1. \\ & ((v6\_compos\_0 X1 (u1\_compos\_1 X0)) \wedge (m1\_subset\_1 X1 (u1\_compos\_1 \\ & X0))) \Rightarrow (\forall X2.((v6\_compos\_0 X2 (u1\_compos\_1 X0)) \wedge (m1\_subset\_1 \\ & X2 (u1\_compos\_1 X0))) \Rightarrow (\forall X3.((v6\_compos\_0 X3 (u1\_compos\_1 \\ & X0)) \wedge (m1\_subset\_1 X3 (u1\_compos\_1 X0))) \Rightarrow (\forall X4.((v6\_compos\_0 \\ & X4 (u1\_compos\_1 X0)) \wedge (m1\_subset\_1 X4 (u1\_compos\_1 X0))) \Rightarrow (\forall X5. \\ & ((v6\_compos\_0 X5 (u1\_compos\_1 X0)) \wedge (m1\_subset\_1 X5 (u1\_compos\_1 \\ & X0))) \Rightarrow (\forall X6.((v6\_compos\_0 X6 (u1\_compos\_1 X0)) \wedge (m1\_subset\_1 \\ & X6 (u1\_compos\_1 X0))) \Rightarrow (k5\_card\_1 (k2\_compos\_2 X0 (k2\_compos\_2 \\ & X0 (k2\_compos\_2 X0 (k2\_compos\_2 X0 (k3\_compos\_2 X0 X1 X2) X3) X4) \\ & X5) X6) = np\_7))))))))) \end{aligned} \tag{2}$$

Assume the following.

$$k6\_xcmplx\_0 \ np\_7 \ np\_1 = np\_6 \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((v1\_amistd\_4 \ X0)\wedge(l1\_compos\_1 \\ & \ X0))\wedge(((v6\_compos\_0 \ X1 \ (u1\_compos\_1 \ X0))\wedge(m1\_subset\_1 \ X1 \ (u1\_compos\_1 \\ & \ X0)))\wedge((v6\_compos\_0 \ X2 \ (u1\_compos\_1 \ X0))\wedge(m1\_subset\_1 \ X2 \ (u1\_compos\_1 \\ & \ X0))))))\Rightarrow((\neg v1\_xboole\_0 \ (k3\_compos\_2 \ X0 \ X1 \ X2))\wedge((v1\_relat\_1 \\ & \ (k3\_compos\_2 \ X0 \ X1 \ X2))\wedge((v4\_relat\_1 \ (k3\_compos\_2 \ X0 \ X1 \ X2) \ k5\_numbers)\wedge \\ & \ ((v5\_relat\_1 \ (k3\_compos\_2 \ X0 \ X1 \ X2) \ (u1\_compos\_1 \ X0))\wedge((v1\_funct\_1 \\ & \ (k3\_compos\_2 \ X0 \ X1 \ X2))\wedge((v1\_finset\_1 \ (k3\_compos\_2 \ X0 \ X1 \ X2))\wedge \\ & \ ((v1\_afinsq\_1 \ (k3\_compos\_2 \ X0 \ X1 \ X2))\wedge((v3\_compos\_1 \ (k3\_compos\_2 \\ & \ X0 \ X1 \ X2) \ X0)\wedge(v4\_compos\_1 \ (k3\_compos\_2 \ X0 \ X1 \ X2) \ X0)))))))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((v1\_amistd\_4 \ X0)\wedge(l1\_compos\_1 \\ & \ X0))\wedge(((\neg v1\_xboole\_0 \ X1)\wedge((v1\_relat\_1 \ X1)\wedge((v4\_relat\_1 \ X1 \ k5\_numbers)\wedge \\ & \ ((v5\_relat\_1 \ X1 \ (u1\_compos\_1 \ X0))\wedge((v1\_funct\_1 \ X1)\wedge((v1\_finset\_1 \\ & \ X1)\wedge((v1\_afinsq\_1 \ X1)\wedge((v3\_compos\_1 \ X1 \ X0)\wedge(v4\_compos\_1 \ X1 \ X0))))))))))\wedge \\ & \ ((v6\_compos\_0 \ X2 \ (u1\_compos\_1 \ X0))\wedge(m1\_subset\_1 \ X2 \ (u1\_compos\_1 \\ & \ X0))))))\Rightarrow((\neg v1\_xboole\_0 \ (k2\_compos\_2 \ X0 \ X1 \ X2))\wedge((v1\_relat\_1 \\ & \ (k2\_compos\_2 \ X0 \ X1 \ X2))\wedge((v4\_relat\_1 \ (k2\_compos\_2 \ X0 \ X1 \ X2) \ k5\_numbers)\wedge \\ & \ ((v5\_relat\_1 \ (k2\_compos\_2 \ X0 \ X1 \ X2) \ (u1\_compos\_1 \ X0))\wedge((v1\_funct\_1 \\ & \ (k2\_compos\_2 \ X0 \ X1 \ X2))\wedge((v1\_finset\_1 \ (k2\_compos\_2 \ X0 \ X1 \ X2))\wedge \\ & \ ((v1\_afinsq\_1 \ (k2\_compos\_2 \ X0 \ X1 \ X2))\wedge((v3\_compos\_1 \ (k2\_compos\_2 \\ & \ X0 \ X1 \ X2) \ X0)\wedge(v4\_compos\_1 \ (k2\_compos\_2 \ X0 \ X1 \ X2) \ X0)))))))))) \end{aligned} \quad (5)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((v1\_amistd\_4 \ X0)\wedge(l1\_compos\_1 \ X0))\Rightarrow(\forall X1. \\ & \ ((v6\_compos\_0 \ X1 \ (u1\_compos\_1 \ X0))\wedge(m1\_subset\_1 \ X1 \ (u1\_compos\_1 \\ & \ X0)))\Rightarrow(\forall X2.((v6\_compos\_0 \ X2 \ (u1\_compos\_1 \ X0))\wedge(m1\_subset\_1 \\ & \ X2 \ (u1\_compos\_1 \ X0)))\Rightarrow(\forall X3.((v6\_compos\_0 \ X3 \ (u1\_compos\_1 \\ & \ X0))\wedge(m1\_subset\_1 \ X3 \ (u1\_compos\_1 \ X0)))\Rightarrow(\forall X4.((v6\_compos\_0 \\ & \ X4 \ (u1\_compos\_1 \ X0))\wedge(m1\_subset\_1 \ X4 \ (u1\_compos\_1 \ X0)))\Rightarrow(\forall X5. \\ & \ ((v6\_compos\_0 \ X5 \ (u1\_compos\_1 \ X0))\wedge(m1\_subset\_1 \ X5 \ (u1\_compos\_1 \\ & \ X0)))\Rightarrow(\forall X6.((v6\_compos\_0 \ X6 \ (u1\_compos\_1 \ X0))\wedge(m1\_subset\_1 \\ & \ X6 \ (u1\_compos\_1 \ X0)))\Rightarrow(k62\_valued\_1 \ (k2\_compos\_2 \ X0 \ (k2\_compos\_2 \\ & \ X0 \ (k2\_compos\_2 \ X0 \ (k3\_compos\_2 \ X0 \ X1 \ X2) \ X3) \ X4) \\ & \ X5) \ X6) = np\_6)))))) \end{aligned}$$