

# t25\_genealg1 (TMSWGvSByCgQsr- JNxsWaP1HWybmEMkMYTMa)

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Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v2\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_finseq\_1 : \iota \Rightarrow o$  be given. Let  $m1\_genealg1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k9\_genealg1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k8\_genealg1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_genealg1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_genealg1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_genealg1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_genealg1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m2\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_card\_3 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0.(m1\_subset\_1 X0 k5\_numbers) \Rightarrow (\forall X1.(m1\_subset\_1 \\ & \quad X1 k5\_numbers) \Rightarrow (\forall X2.((\neg v1\_xboole\_0 X2) \wedge ((v1\_relat\_1 \\ & \quad X2) \wedge ((v2\_relat\_1 X2) \wedge ((v1\_funct\_1 X2) \wedge (v1\_finseq\_1 X2)))))) \Rightarrow \\ & \quad (\forall X3.(m1\_genealg1 X3 X2) \Rightarrow (\forall X4.(m1\_genealg1 X4 X2) \Rightarrow \\ & \quad (k8\_genealg1 X2 X3 X4 X0 X1 = k8\_genealg1 X2 X3 X4 X1 X0)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\ & (((\neg v1\_xboole\_0 X0) \wedge ((v1\_relat\_1 X0) \wedge ((v2\_relat\_1 X0) \wedge ((v1\_funct\_1 \\ & \quad X0) \wedge (v1\_finseq\_1 X0)))))) \wedge ((m1\_genealg1 X1 X0) \wedge ((m1\_genealg1 \\ & \quad X2 X0) \wedge ((m1\_subset\_1 X3 k5\_numbers) \wedge ((m1\_subset\_1 X4 k5\_numbers) \wedge \\ & \quad (m1\_subset\_1 X5 k5\_numbers)))))) \Rightarrow (k9\_genealg1 X0 X1 X2 X3 X4 X5 = \\ & \quad k3\_genealg1 X0 X1 X2 X3 X4 X5) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.(((\neg v1\_xboole\_0 \\ & \quad X0) \wedge ((v1\_relat\_1 X0) \wedge ((v2\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 \\ & \quad X0)))))) \wedge ((m1\_genealg1 X1 X0) \wedge ((m1\_genealg1 X2 X0) \wedge ((m1\_subset\_1 \\ & \quad X3 k5\_numbers) \wedge (m1\_subset\_1 X4 k5\_numbers)))))) \Rightarrow (k8\_genealg1 \\ & \quad X0 X1 X2 X3 X4 = k2\_genealg1 X0 X1 X2 X3 X4) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((\neg v1\_xboole\_0 \\ & X0)\wedge((v1\_relat\_1 X0)\wedge((v2\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge(v1\_finseq\_1 \\ & X0))))))\wedge((m1\_genealg1 X1 X0)\wedge((m1\_genealg1 X2 X0)\wedge(m1\_subset\_1 \\ & X3 k5\_numbers))))\Rightarrow(k7\_genealg1 X0 X1 X2 X3 = k1\_genealg1 X0 X1 X2 \\ & X3) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1\_xboole\_0 X0)\wedge((v1\_relat\_1 X0)\wedge((v2\_relat\_1 \\ & X0)\wedge((v1\_funct\_1 X0)\wedge(v1\_finseq\_1 X0))))))\Rightarrow(\forall X1.(m1\_genealg1 \\ & X1 X0)\Rightarrow(m2\_finseq\_1 X1 (k3\_card\_3 X0))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((\neg v1\_xboole\_0 \\ & X0)\wedge((v1\_relat\_1 X0)\wedge((v2\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge(v1\_finseq\_1 \\ & X0))))))\wedge((m1\_genealg1 X1 X0)\wedge((m1\_genealg1 X2 X0)\wedge(m1\_subset\_1 \\ & X3 k5\_numbers))))\Rightarrow(m1\_genealg1 (k7\_genealg1 X0 X1 X2 X3) X0) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1\_xboole\_0 X0)\wedge((v1\_relat\_1 X0)\wedge((v2\_relat\_1 \\ & X0)\wedge((v1\_funct\_1 X0)\wedge(v1\_finseq\_1 X0))))))\Rightarrow(\forall X1.(m2\_finseq\_1 \\ & X1 (k3\_card\_3 X0))\Rightarrow(\forall X2.(m2\_finseq\_1 X2 (k3\_card\_3 X0))\Rightarrow \\ & (\forall X3.(m1\_subset\_1 X3 k5\_numbers)\Rightarrow(\forall X4.(m1\_subset\_1 \\ & X4 k5\_numbers)\Rightarrow(\forall X5.(m1\_subset\_1 X5 k5\_numbers)\Rightarrow(k3\_genealg1 \\ & X0 X1 X2 X3 X4 X5 = k1\_genealg1 X0 (k2\_genealg1 X0 X1 X2 X3 X4) (k2\_genealg1 \\ & X0 X2 X1 X3 X4) X5)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1\_xboole\_0 X0)\wedge((v1\_relat\_1 X0)\wedge((v2\_relat\_1 \\ & X0)\wedge((v1\_funct\_1 X0)\wedge(v1\_finseq\_1 X0))))))\Rightarrow(\forall X1.(m2\_finseq\_1 \\ & X1 (k3\_card\_3 X0))\Rightarrow(\forall X2.(m2\_finseq\_1 X2 (k3\_card\_3 X0))\Rightarrow \\ & (\forall X3.(m1\_subset\_1 X3 k5\_numbers)\Rightarrow(\forall X4.(m1\_subset\_1 \\ & X4 k5\_numbers)\Rightarrow(k2\_genealg1 X0 X1 X2 X3 X4 = k1\_genealg1 X0 (k1\_genealg1 \\ & X0 X1 X2 X3) (k1\_genealg1 X0 X2 X1 X3) X4)))))) \end{aligned} \quad (8)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(m1\_subset\_1 X0 k5\_numbers)\Rightarrow(\forall X1.(m1\_subset\_1 \\ & X1 k5\_numbers)\Rightarrow(\forall X2.(m1\_subset\_1 X2 k5\_numbers)\Rightarrow(\forall X3. \\ & ((\neg v1\_xboole\_0 X3)\wedge((v1\_relat\_1 X3)\wedge((v2\_relat\_1 X3)\wedge((v1\_funct\_1 \\ & X3)\wedge(v1\_finseq\_1 X3))))))\Rightarrow(\forall X4.(m1\_genealg1 X4 X3)\Rightarrow(\forall X5. \\ & (m1\_genealg1 X5 X3)\Rightarrow((k9\_genealg1 X3 X4 X5 X0 X1 X2 = k9\_genealg1 \\ & X3 X4 X5 X1 X0 X2)\wedge(k9\_genealg1 X3 X4 X5 X0 X1 X2 = k9\_genealg1 X3 X4 X5 \\ & X0 X2 X1)))))) \end{aligned}$$