

t21\_binom  
(TMRsm3XnksjdUEQN6TzQyfJv6i3sihLpFNk)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v7\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v1\_algstr\_1 : \iota \Rightarrow o$  be given. Let  $v5\_vectsp\_1 : \iota \Rightarrow o$  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  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k5\_numbers : \iota$  be given. Let  $k6\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_binom : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_binom : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v6\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v5\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v2\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $l2\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l3\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $u2\_algstr\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $l5\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l4\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l4\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l3\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $k5\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_vectsp\_1 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v6\_algstr\_0 X0) \wedge ((v1\_algstr\_1 \\
& X0) \wedge ((v5\_vectsp\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge \\
& (l6\_algstr\_0 X0)))))) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (u1\_struct\_0 \\
& X0)) \Rightarrow (\forall X2. (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3. \\
& (m1\_subset\_1 X3 k5\_numbers) \Rightarrow (k6\_algstr\_0 X0 X2 (k5\_binom X0 X1 \\
& X3) = k6\_binom X0 (k6\_algstr\_0 X0 X2 X1) X3))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v5\_algstr\_0 X0) \wedge ((v1\_algstr\_1 \\
& X0) \wedge ((v2\_vectsp\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge \\
& (l6\_algstr\_0 X0)))))) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (u1\_struct\_0 \\
& X0)) \Rightarrow (\forall X2. (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3. \\
& (m1\_subset\_1 X3 k5\_numbers) \Rightarrow (k6\_algstr\_0 X0 (k5\_binom X0 X1 X3) \\
& X2 = k5\_binom X0 (k6\_algstr\_0 X0 X1 X2) X3))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v1\_algstr\_1 X0) \wedge ((v3\_rlvect\_1 \\ X0) \wedge ((v4\_rlvect\_1 X0) \wedge (l2\_algstr\_0 X0)))))) \Rightarrow (\forall X1.(m1\_subset\_1 \\ X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 k5\_numbers) \Rightarrow \\ (k5\_binom X0 X1 X2 = k6\_binom X0 X1 X2))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.(l3\_algstr\_0 X0) \Rightarrow ((v1\_funct\_1 (u2\_algstr\_0 X0)) \wedge \\ ((v1\_funct\_2 (u2\_algstr\_0 X0) (k2\_zfmisc\_1 (u1\_struct\_0 X0) ( \\ u1\_struct\_0 X0)) (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 (u2\_algstr\_0 \\ X0) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) ( \\ u1\_struct\_0 X0)) (u1\_struct\_0 X0)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.(l6\_algstr\_0 X0) \Rightarrow ((l2\_algstr\_0 X0) \wedge (l5\_algstr\_0 X0)) \quad (5)$$

Assume the following.

$$\forall X0.(l5\_algstr\_0 X0) \Rightarrow ((l4\_algstr\_0 X0) \wedge (l4\_struct\_0 X0)) \quad (6)$$

Assume the following.

$$\forall X0.(l4\_algstr\_0 X0) \Rightarrow ((l3\_struct\_0 X0) \wedge (l3\_algstr\_0 X0)) \quad (7)$$

Assume the following.

$$\forall X0.(l2\_algstr\_0 X0) \Rightarrow ((l2\_struct\_0 X0) \wedge (l1\_algstr\_0 X0)) \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. \forall X3. (((v1\_funct\_1 X1) \wedge \\ ((v1\_funct\_2 X1 (k2\_zfmisc\_1 X0 X0) X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ (k2\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0) X0)))))) \wedge ((m1\_subset\_1 X2 X0) \wedge \\ (m1\_subset\_1 X3 X0))) \Rightarrow (m1\_subset\_1 (k5\_binop\_1 X0 X1 X2 X3) X0) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0.(l3\_algstr\_0 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 \\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (k6\_algstr\_0 \\ X0 X1 X2 = k5\_binop\_1 (u1\_struct\_0 X0) (u2\_algstr\_0 X0) X1 X2))) \end{aligned} \quad (10)$$

Assume the following.

$$\forall X0.(l1\_algstr\_0 X0) \Rightarrow ((v7\_algstr\_0 X0) \Rightarrow ((v5\_algstr\_0 \\ X0) \wedge (v6\_algstr\_0 X0))) \quad (11)$$

Assume the following.

$$\forall X0.(l6\_algstr\_0 X0) \Rightarrow (((\neg v2\_struct\_0 X0) \wedge (v5\_vectsp\_1 \\ X0)) \Rightarrow ((\neg v2\_struct\_0 X0) \wedge ((v1\_vectsp\_1 X0) \wedge (v2\_vectsp\_1 X0)))) \quad (12)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v7\_algstr\_0 X0) \wedge ((v1\_algstr\_1 \\ & X0) \wedge ((v5\_vectsp\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge \\ & (l6\_algstr\_0 X0)))))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 \\ & X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3. \\ & (m1\_subset\_1 X3 k5\_numbers) \Rightarrow (k6\_algstr\_0 X0 (k6\_binom X0 X1 X3) \\ & X2 = k6\_algstr\_0 X0 X1 (k5\_binom X0 X2 X3)))))) \end{aligned}$$