

# t12\_binom (TMLbQNTgpZ- pLXVKUXd58THHjj1E7TNEHVLj)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l2\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k5\_binom : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k6\_binom : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $k5\_numbers : \iota$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $k4\_binom : \iota \Rightarrow \iota$  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  $k3\_binom : \iota \Rightarrow \iota$  be given. Let  $k2\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $k1\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$m1\_subset\_1 \ k1\_xboole\_0 \ k4\_ordinal1 \tag{1}$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \tag{2}$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \tag{3}$$

Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2\_struct\_0 \ X0) \wedge (l2\_algstr\_0 \ X0)) \Rightarrow ((v1\_funct\_1 \\ &(k4\_binom \ X0)) \wedge ((v1\_funct\_2 \ (k4\_binom \ X0) \ (k2\_zfmisc\_1 \ (u1\_struct\_0 \\ & \ X0) \ k5\_numbers) \ (u1\_struct\_0 \ X0)) \wedge (m1\_subset\_1 \ (k4\_binom \ X0) \\ & \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ (k2\_zfmisc\_1 \ (u1\_struct\_0 \ X0) \ k5\_numbers) \\ & \ (u1\_struct\_0 \ X0)))))) \end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2\_struct\_0 \ X0) \wedge (l2\_algstr\_0 \ X0)) \Rightarrow ((v1\_funct\_1 \\ &(k3\_binom \ X0)) \wedge ((v1\_funct\_2 \ (k3\_binom \ X0) \ (k2\_zfmisc\_1 \ k5\_numbers \\ & \ (u1\_struct\_0 \ X0)) \ (u1\_struct\_0 \ X0)) \wedge (m1\_subset\_1 \ (k3\_binom \ X0) \\ & \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ (k2\_zfmisc\_1 \ k5\_numbers \ (u1\_struct\_0 \\ & \ X0)) \ (u1\_struct\_0 \ X0)))))) \end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge (l2\_algstr\_0 X0)) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 \\ & k5\_numbers) \Rightarrow (k6\_binom X0 X1 X2 = k2\_binop\_1 (u1\_struct\_0 X0) k5\_numbers \\ & (u1\_struct\_0 X0) (k4\_binom X0) X1 X2))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge (l2\_algstr\_0 X0)) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 \\ & k5\_numbers) \Rightarrow (k5\_binom X0 X1 X2 = k2\_binop\_1 k5\_numbers (u1\_struct\_0 \\ & X0) (u1\_struct\_0 X0) (k3\_binom X0) X2 X1))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge (l2\_algstr\_0 X0)) \Rightarrow (\forall X1. \\ & ((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) \\ & k5\_numbers) (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 ( \\ & k2\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) k5\_numbers) (u1\_struct\_0 \\ & X0)))))) \Rightarrow ((X1 = k4\_binom X0) \Leftrightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 \\ & X0)) \Rightarrow ((k2\_binop\_1 (u1\_struct\_0 X0) k5\_numbers (u1\_struct\_0 X0) \\ & X1 X2 k6\_numbers = k4\_struct\_0 X0) \wedge (\forall X3.(m1\_subset\_1 X3 \\ & k5\_numbers) \Rightarrow (k2\_binop\_1 (u1\_struct\_0 X0) k5\_numbers (u1\_struct\_0 \\ & X0) X1 X2 (k2\_nat\_1 X3 np\_1) = k1\_algstr\_0 X0 (k2\_binop\_1 (u1\_struct\_0 \\ & X0) k5\_numbers (u1\_struct\_0 X0) X1 X2 X3) X2)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge (l2\_algstr\_0 X0)) \Rightarrow (\forall X1. \\ & ((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 (k2\_zfmisc\_1 k5\_numbers (u1\_struct\_0 \\ & X0)) (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & (k2\_zfmisc\_1 k5\_numbers (u1\_struct\_0 X0)) (u1\_struct\_0 X0)))))) \Rightarrow \\ & ((X1 = k3\_binom X0) \Leftrightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow \\ & ((k2\_binop\_1 k5\_numbers (u1\_struct\_0 X0) (u1\_struct\_0 X0) X1 k6\_numbers \\ & X2 = k4\_struct\_0 X0) \wedge (\forall X3.(m1\_subset\_1 X3 k5\_numbers) \Rightarrow \\ & (k2\_binop\_1 k5\_numbers (u1\_struct\_0 X0) (u1\_struct\_0 X0) X1 (k2\_nat\_1 \\ & X3 np\_1) X2 = k1\_algstr\_0 X0 X2 (k2\_binop\_1 k5\_numbers (u1\_struct\_0 \\ & X0) (u1\_struct\_0 X0) X1 X3 X2)))))) \end{aligned} \quad (9)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge (l2\_algstr\_0 X0)) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow ((k5\_binom X0 X1 k6\_numbers = \\ & k4\_struct\_0 X0) \wedge (k6\_binom X0 X1 k6\_numbers = k4\_struct\_0 X0))) \end{aligned}$$