

# t32\_quofield (TM- cmaBLa2g3AMNRgSynNwsWEd4mivKr6uY7)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v6\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v13\_algstr\_0 : \iota \Rightarrow o$  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  $v3\_group\_1 : \iota \Rightarrow o$  be given. Let  $v5\_group\_1 : \iota \Rightarrow o$  be given. Let  $v4\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $v5\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $v1\_vectsp\_2 : \iota \Rightarrow o$  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  $k19\_quofield : \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k17\_quofield : \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  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  $k3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $g6\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l5\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $k7\_quofield : \iota \Rightarrow \iota$  be given. Let  $l2\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $k1\_quofield : \iota \Rightarrow \iota$  be given. Let  $v36\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $k16\_quofield : \iota \Rightarrow \iota$  be given. Let  $k15\_quofield : \iota \Rightarrow \iota$  be given. Let  $k13\_quofield : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k12\_quofield : \iota \Rightarrow \iota$  be given. Let  $k11\_quofield : \iota \Rightarrow \iota$  be given. Let  $u1\_algstr\_0 : \iota \Rightarrow \iota$  be given. Let  $u2\_algstr\_0 : \iota \Rightarrow \iota$  be given. Let  $u3\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $u2\_struct\_0 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v1\_xboole\_0 X0) \wedge ((\neg v1\_xboole\_0 X1) \wedge \\ & (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)))) \Rightarrow (\forall X2. (m2\_subset\_1 \\ & X2 X0 X1) \Leftrightarrow (m1\_subset\_1 X2 X1)) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1\_xboole\_0 X0) \wedge \\ & (((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 X0 X1) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 X1)))))) \wedge (m1\_subset\_1 X3 X0))) \Rightarrow (k3\_funct\_2 X0 \\ & X1 X2 X3 = k1\_funct\_1 X2 X3) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.(((v1\_funct\_1 \\
& X1)\wedge((v1\_funct\_2 X1 (k2\_zfmisc\_1 X0 X0) X0)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0) X0))))\wedge(((v1\_funct\_1 X2)\wedge( \\
& (v1\_funct\_2 X2 (k2\_zfmisc\_1 X0 X0) X0)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0) X0))))\wedge((m1\_subset\_1 X3 X0)\wedge \\
& (m1\_subset\_1 X4 X0))))\Rightarrow(\forall X5.\forall X6.\forall X7.\forall X8. \\
& \forall X9.(g6\_algstr\_0 X0 X1 X2 X3 X4 = g6\_algstr\_0 X5 X6 X7 X8 X9)\Rightarrow \\
& ((X0 = X5)\wedge((X1 = X6)\wedge((X2 = X7)\wedge((X3 = X8)\wedge(X4 = X9))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge((\neg v6\_struct\_0 X0)\wedge(l5\_algstr\_0 X0)))\Rightarrow(\neg v1\_xboole\_0 (k7\_quofield X0)) \tag{4}$$

Assume the following.

$$\forall X0.(l6\_algstr\_0 X0)\Rightarrow((l2\_algstr\_0 X0)\wedge(l5\_algstr\_0 X0)) \tag{5}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge((\neg v6\_struct\_0 X0)\wedge(l5\_algstr\_0 X0)))\Rightarrow(m1\_subset\_1 (k7\_quofield X0) (k1\_zfmisc\_1 (k1\_zfmisc\_1 (k1\_quofield X0)))) \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0)\wedge((\neg v6\_struct\_0 X0)\wedge((v13\_algstr\_0 \\
& X0)\wedge((v2\_rlvect\_1 X0)\wedge((v3\_rlvect\_1 X0)\wedge((v4\_rlvect\_1 X0)\wedge \\
& ((v3\_group\_1 X0)\wedge((v5\_group\_1 X0)\wedge((v4\_vectsp\_1 X0)\wedge((v5\_vectsp\_1 \\
& X0)\wedge((v1\_vectsp\_2 X0)\wedge(l6\_algstr\_0 X0))))))))))\Rightarrow((v36\_algstr\_0 \\
& (k19\_quofield X0))\wedge(l6\_algstr\_0 (k19\_quofield X0)))
\end{aligned} \tag{7}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0)\wedge((\neg v6\_struct\_0 X0)\wedge((v13\_algstr\_0 \\
& X0)\wedge((v2\_rlvect\_1 X0)\wedge((v3\_rlvect\_1 X0)\wedge((v4\_rlvect\_1 X0)\wedge \\
& ((v3\_group\_1 X0)\wedge((v5\_group\_1 X0)\wedge((v4\_vectsp\_1 X0)\wedge((v5\_vectsp\_1 \\
& X0)\wedge((v1\_vectsp\_2 X0)\wedge(l6\_algstr\_0 X0))))))))))\Rightarrow((v1\_funct\_1 \\
& (k17\_quofield X0))\wedge((v1\_funct\_2 (k17\_quofield X0) (k7\_quofield \\
& X0) (k7\_quofield X0))\wedge(m1\_subset\_1 (k17\_quofield X0) (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 (k7\_quofield X0) (k7\_quofield X0))))))
\end{aligned} \tag{8}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\ & X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge \\ & ((v3\_group\_1 X0) \wedge ((v5\_group\_1 X0) \wedge ((v4\_vectsp\_1 X0) \wedge ((v5\_vectsp\_1 \\ & X0) \wedge ((v1\_vectsp\_2 X0) \wedge (l6\_algstr\_0 X0)))))))))) \Rightarrow ((v1\_funct\_1 \\ & (k16\_quofield X0)) \wedge ((v1\_funct\_2 (k16\_quofield X0) (k2\_zfmisc\_1 \\ & (k7\_quofield X0) (k7\_quofield X0)) (k7\_quofield X0)) \wedge (m1\_subset\_1 \\ & (k16\_quofield X0) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 (k7\_quofield \\ & X0) (k7\_quofield X0)) (k7\_quofield X0)))))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\ & X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge \\ & ((v3\_group\_1 X0) \wedge ((v5\_group\_1 X0) \wedge ((v4\_vectsp\_1 X0) \wedge ((v5\_vectsp\_1 \\ & X0) \wedge ((v1\_vectsp\_2 X0) \wedge (l6\_algstr\_0 X0)))))))))) \Rightarrow ((v1\_funct\_1 \\ & (k15\_quofield X0)) \wedge ((v1\_funct\_2 (k15\_quofield X0) (k2\_zfmisc\_1 \\ & (k7\_quofield X0) (k7\_quofield X0)) (k7\_quofield X0)) \wedge (m1\_subset\_1 \\ & (k15\_quofield X0) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 (k7\_quofield \\ & X0) (k7\_quofield X0)) (k7\_quofield X0)))))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge \\ & ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 \\ & X0) \wedge ((v3\_group\_1 X0) \wedge ((v5\_group\_1 X0) \wedge ((v4\_vectsp\_1 X0) \wedge (( \\ & v5\_vectsp\_1 X0) \wedge ((v1\_vectsp\_2 X0) \wedge (l6\_algstr\_0 X0)))))))))) \wedge \\ & (m1\_subset\_1 X1 (k7\_quofield X0))) \Rightarrow (m2\_subset\_1 (k13\_quofield \\ & X0 X1) (k1\_zfmisc\_1 (k1\_quofield X0)) (k7\_quofield X0)) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\ & X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge \\ & ((v3\_group\_1 X0) \wedge ((v5\_group\_1 X0) \wedge ((v4\_vectsp\_1 X0) \wedge ((v5\_vectsp\_1 \\ & X0) \wedge ((v1\_vectsp\_2 X0) \wedge (l6\_algstr\_0 X0)))))))))) \Rightarrow (m2\_subset\_1 \\ & (k12\_quofield X0) (k1\_zfmisc\_1 (k1\_quofield X0)) (k7\_quofield \\ & X0)) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\ & X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge \\ & ((v3\_group\_1 X0) \wedge ((v5\_group\_1 X0) \wedge ((v4\_vectsp\_1 X0) \wedge ((v5\_vectsp\_1 \\ & X0) \wedge ((v1\_vectsp\_2 X0) \wedge (l6\_algstr\_0 X0)))))))))) \Rightarrow (m2\_subset\_1 \\ & (k11\_quofield X0) (k1\_zfmisc\_1 (k1\_quofield X0)) (k7\_quofield \\ & X0)) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} \forall X0. (& \neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\ & X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge \\ & ((v3\_group\_1 X0) \wedge ((v5\_group\_1 X0) \wedge ((v4\_vectsp\_1 X0) \wedge ((v5\_vectsp\_1 \\ & X0) \wedge ((v1\_vectsp\_2 X0) \wedge (l6\_algstr\_0 X0)))))))))) \Rightarrow (k19\_quofield \\ & X0 = g6\_algstr\_0 (k7\_quofield X0) (k15\_quofield X0) (k16\_quofield \\ & X0) (k12\_quofield X0) (k11\_quofield X0)) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} \forall X0. (& \neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\ & X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge \\ & ((v3\_group\_1 X0) \wedge ((v5\_group\_1 X0) \wedge ((v4\_vectsp\_1 X0) \wedge ((v5\_vectsp\_1 \\ & X0) \wedge ((v1\_vectsp\_2 X0) \wedge (l6\_algstr\_0 X0)))))))))) \Rightarrow (\forall X1. \\ & ((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 (k7\_quofield X0) (k7\_quofield \\ & X0)) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k7\_quofield \\ & X0) (k7\_quofield X0)))))) \Rightarrow ((X1 = k17\_quofield X0) \Leftrightarrow (\forall X2. \\ & (m2\_subset\_1 X2 (k1\_zfmisc\_1 (k1\_quofield X0)) (k7\_quofield X0)) \Rightarrow \\ & (k3\_funct\_2 (k7\_quofield X0) (k7\_quofield X0) X1 X2 = k13\_quofield \\ & X0 X2)))) \end{aligned} \quad (15)$$

Assume the following.

$$\forall X0. (v1\_xboole\_0 X0) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)) \Rightarrow (v1\_xboole\_0 X1)) \quad (16)$$

Assume the following.

$$\forall X0. (l6\_algstr\_0 X0) \Rightarrow ((v36\_algstr\_0 X0) \Rightarrow (X0 = g6\_algstr\_0 (u1\_struct\_0 X0) (u1\_algstr\_0 X0) (u2\_algstr\_0 X0) (u3\_struct\_0 X0) (u2\_struct\_0 X0))) \quad (17)$$

### Theorem 1

$$\begin{aligned} \forall X0. (& \neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\ & X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge \\ & ((v3\_group\_1 X0) \wedge ((v5\_group\_1 X0) \wedge ((v4\_vectsp\_1 X0) \wedge ((v5\_vectsp\_1 \\ & X0) \wedge ((v1\_vectsp\_2 X0) \wedge (l6\_algstr\_0 X0)))))))))) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 X1 (u1\_struct\_0 (k19\_quofield X0)) \Rightarrow (m1\_subset\_1 \\ & (k1\_funct\_1 (k17\_quofield X0) X1) (u1\_struct\_0 (k19\_quofield \\ & X0)))) \end{aligned}$$