

# t31\_quofield

## (TMJ9at1nAcLqsUfuSqfgDzaFoRGfurcwpT1)

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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  $k1\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k15\_quofield : \iota \Rightarrow \iota$  be given. Let  $k7\_quofield : \iota \Rightarrow \iota$  be given. Let  $r1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_algstr\_0 : \iota \Rightarrow \iota$  be given. Let  $u2\_algstr\_0 : \iota \Rightarrow \iota$  be given. Let  $k16\_quofield : \iota \Rightarrow \iota$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k11\_quofield : \iota \Rightarrow \iota$  be given. Let  $k5\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k12\_quofield : \iota \Rightarrow \iota$  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  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k5\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\
& X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge \\
& ((v3\_group\_1 X0) \wedge ((v5\_group\_1 X0) \wedge ((v4\_vectsp\_1 X0) \wedge ((v5\_vectsp\_1 \\
& X0) \wedge ((v1\_vectsp\_2 X0) \wedge (l6\_algstr\_0 X0)))))))))) \Rightarrow ((u1\_struct\_0 \\
& (k19\_quofield X0) = k7\_quofield X0) \wedge ((r1\_funct\_2 (k2\_zfmisc\_1 \\
& (u1\_struct\_0 (k19\_quofield X0)) (u1\_struct\_0 (k19\_quofield X0))) \\
& (u1\_struct\_0 (k19\_quofield X0)) (k2\_zfmisc\_1 (k7\_quofield X0) \\
& (k7\_quofield X0)) (k7\_quofield X0) (u1\_algstr\_0 (k19\_quofield \\
& X0)) (k15\_quofield X0)) \wedge ((r1\_funct\_2 (k2\_zfmisc\_1 (u1\_struct\_0 \\
& (k19\_quofield X0)) (u1\_struct\_0 (k19\_quofield X0))) (u1\_struct\_0 \\
& (k19\_quofield X0)) (k2\_zfmisc\_1 (k7\_quofield X0) (k7\_quofield \\
& X0)) (k7\_quofield X0) (u2\_algstr\_0 (k19\_quofield X0)) (k16\_quofield \\
& X0)) \wedge ((k4\_struct\_0 (k19\_quofield X0) = k11\_quofield X0) \wedge (k5\_struct\_0 \\
& (k19\_quofield X0) = k12\_quofield X0))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((v1\_funct\_1 X1)\wedge \\ & ((v1\_funct\_2 X1 (k2\_zfmisc\_1 X0 X0) X0)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0) X0))))))\wedge((m1\_subset\_1 X2 X0)\wedge \\ & (m1\_subset\_1 X3 X0)))\Rightarrow(k5\_binop\_1 X0 X1 X2 X3 = k1\_binop\_1 X1 X2 X3) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((v1\_funct\_1 X1)\wedge \\ & ((v1\_funct\_2 X1 (k2\_zfmisc\_1 X0 X0) X0)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0) X0))))))\wedge((m1\_subset\_1 X2 X0)\wedge \\ & (m1\_subset\_1 X3 X0)))\Rightarrow(m1\_subset\_1 (k5\_binop\_1 X0 X1 X2 X3) X0) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0)\wedge((\neg v6\_struct\_0 X0)\wedge((v13\_algstr\_0 \\ & X0)\wedge((v2\_rlvect\_1 X0)\wedge((v3\_rlvect\_1 X0)\wedge((v4\_rlvect\_1 X0)\wedge \\ & ((v3\_group\_1 X0)\wedge((v5\_group\_1 X0)\wedge((v4\_vectsp\_1 X0)\wedge((v5\_vectsp\_1 \\ & X0)\wedge((v1\_vectsp\_2 X0)\wedge(l6\_algstr\_0 X0))))))))))\Rightarrow((v1\_funct\_1 \\ & (k15\_quofield X0))\wedge((v1\_funct\_2 (k15\_quofield X0) (k2\_zfmisc\_1 \\ & (k7\_quofield X0) (k7\_quofield X0)) (k7\_quofield X0))\wedge(m1\_subset\_1 \\ & (k15\_quofield X0) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 (k7\_quofield \\ & X0) (k7\_quofield X0)) (k7\_quofield X0)))))) \end{aligned} \quad (4)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0)\wedge((\neg v6\_struct\_0 X0)\wedge((v13\_algstr\_0 \\ & X0)\wedge((v2\_rlvect\_1 X0)\wedge((v3\_rlvect\_1 X0)\wedge((v4\_rlvect\_1 X0)\wedge \\ & ((v3\_group\_1 X0)\wedge((v5\_group\_1 X0)\wedge((v4\_vectsp\_1 X0)\wedge((v5\_vectsp\_1 \\ & X0)\wedge((v1\_vectsp\_2 X0)\wedge(l6\_algstr\_0 X0))))))))))\Rightarrow(\forall X1. \\ & (m1\_subset\_1 X1 (u1\_struct\_0 (k19\_quofield X0)))\Rightarrow(\forall X2. \\ & (m1\_subset\_1 X2 (u1\_struct\_0 (k19\_quofield X0)))\Rightarrow(m1\_subset\_1 \\ & (k1\_binop\_1 (k15\_quofield X0) X1 X2) (u1\_struct\_0 (k19\_quofield \\ & X0)))))) \end{aligned}$$